SUPER®

SUPER® X7SBT
SUPER® X7SBT-10G

USER'S MANUAL

Revision 1.0a

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Manual Revision 1.0a

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Preface

About This Manual

This manual is written for system integrators, PC technicians and knowledgeable PC users. It provides information for the installation and use of the SUPERMICRO X7SBT/X7SBT-10Gb motherboard. The SUPERMICRO X7SBT/X7SBT-10G supports single Intel® Xeon® 3000 sequence/Core™ 2 Extreme/Core™ 2 Quad/ Core™ 2 Duo processor with a system bus speed of 1600/1333/1066/800 MHz. Memory supports Non-ECC unbuffered 1600 MHz up to 4GB in 2 DIMMs or DDR3 1333/1066/800 MHz up to 8GB in 4 DIMMs With a Core™ 2 processor built-in, the X7SBT/X7SBT-10Gb support Wide Dynamic Execution, FSB Dynamic Bus Inversion (DBI), and Advanced Digital Media Boost, Smart Memory Access, and Thermal Management 2 (TM2). Please refer to the motherboard specifications pages on our web site (http://www.supermicro.com/products/) for details. This product is intended to be professionally installed and serviced by a technician.

Manual Organization

Chapter 1 describes the features, specifications and performance of the motherboard and provides detailed information about the chipset.

Chapter 2 provides hardware installation instructions. Read this chapter when installing the processor, memory modules and other hardware components into the system. If you encounter any problems, see **Chapter 3**, which describes troubleshooting procedures for video, memory and system setup stored in the CMOS.

Chapter 4 includes an introduction to the BIOS and provides detailed information on running the CMOS Setup utility.

Appendix A provides BIOS Error Beep Codes.

Appendix B lists the Windows OS Installation Instructions.

Appendix C lists Other Software Program Installation Instructions.

Conventions Used in the Manual

Special attention should be given to the following symbols for proper installation and to prevent damage done to the components or injury to yourself.

Warning: Important information given to ensure proper system installation or to prevent damage to the components.

Note: Additional Information given to differentiate various models or to ensure correct system setup.

Table of Contents

Chapter 1: Introduction

1-1 Overview 1-1
Checklist 1-1
Contacting Supermicro 1-2
SUPER® X7SBT/X7SBT-10G Image 1-3
SUPER® X7SBT/X7SBT-10G Motherboard Layout 1-4
SUPER® X7SBT/X7SBT-10G Quick Reference 1-5
Motherboard Features 1-6
Block Diagram 1-8
1-2 Chipset Overview 1-9
1-3 Special Features 1-10
1-4 PC Health Monitoring 1-10
1-5 ACPI Features 1-11
1-6 Power Supply 1-12

Chapter 2: Installation

2-1 Static-Sensitive Devices 2-1
Precautions 2-1
Unpacking 2-1
2-2 Motherboard Installation 2-2
2.3 Processor and Heatsink Installation 2-2
2-4 Installing DIMMs 2-7
2-5 Control Panel Connectors and IO Ports 2-9
Back Panel Connectors/IO Ports 2-9
Front Control Panel 2-10
Front Control Panel Pin Definitions 2-11
NMI Button 2-11
Power LED 2-11
HDD LED 2-12
NIC1/NIC2 LED Indicators 2-12
Overheat/Fan Fail LED 2-13
Power Fail LED 2-13
Reset Button 2-14
Power Button 2-14
2.6 Connecting Cables 2-15
20-Pin Proprietary Power Connector 2-15
4-Pin Auxiliary Power Connector 2-16

Universal Serial Bus (USB) 2-17
Fan Headers 2-18
Chassis Intrusion... 2-18
Serial Ports 2-19
Power Supply I²C Connector 2-19
GLAN 1/2 (Ethernet) Ports 2-20
10Gb_LAN Port 2-20
SMB 2-21
VGA Connector 2-21
2-7 Jumper Settings 2-22
Explanation of Jumpers 2-22
GLAN Enable/Disable 2-22
10Gb_LAN Enable/Disable 2-23
CMOS Clear 2-23
Watch Dog 2-24
VGA Enable/Disable 2-24
PCI/PCI-E slots to SMB speed 2-25
2-8 Onboard Indicators 2-26
GLAN LEDs 2-26
10Gb_LAN LED 2-26
Onboard Power LED 2-27
2-9 SIMSO IPMI Connection 2-28
SIMSO IPMI Slot 2-28

Chapter 3: Troubleshooting

3-1 Troubleshooting Procedures 3-1
Before Power On 3-1
No Power 3-1
No Video 3-2
Memory Errors 3-2
Losing the System's Setup Configuration 3-3
3-2 Technical Support Procedures 3-3
3-3 Frequently Asked Questions 3-4
3-4 Returning Merchandise for Service 3-4

Chapter 4: BIOS

4-1 Introduction 4-1
4-2 Running Setup 4-2
4-3 Main BIOS Setup 4-2
4-4 Advanced Setup 4-5

4-5 Security Settings 4-21
4-6 Boot Setup 4-22
4-7 Exit 4-23

Appendices:

Appendix A: BIOS POST Beep Codes A-1
Appendix B: Installing the Windows OS B-1
Appendix C: Installing Other Software Programs and Drivers..... C-1

Chapter 1

Introduction

1-1 Overview

Checklist

Congratulations on purchasing your computer motherboard from an acknowledged leader in the industry. Supermicro boards are designed with the utmost attention to detail to provide you with the highest standards in quality and performance.

Please check that the following items have all been included with your motherboard. If anything listed here is damaged or missing, contact your retailer.

All the following items are included in the bulk box.

- One (1) Supermicro Mainboard
- Two (2) SATA cables (CBL-044L)
- One (1) Supermicro CD containing drivers, utilities, and user's manual

Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	support@supermicro.com (Technical Support)
Web Site:	www.supermicro.com

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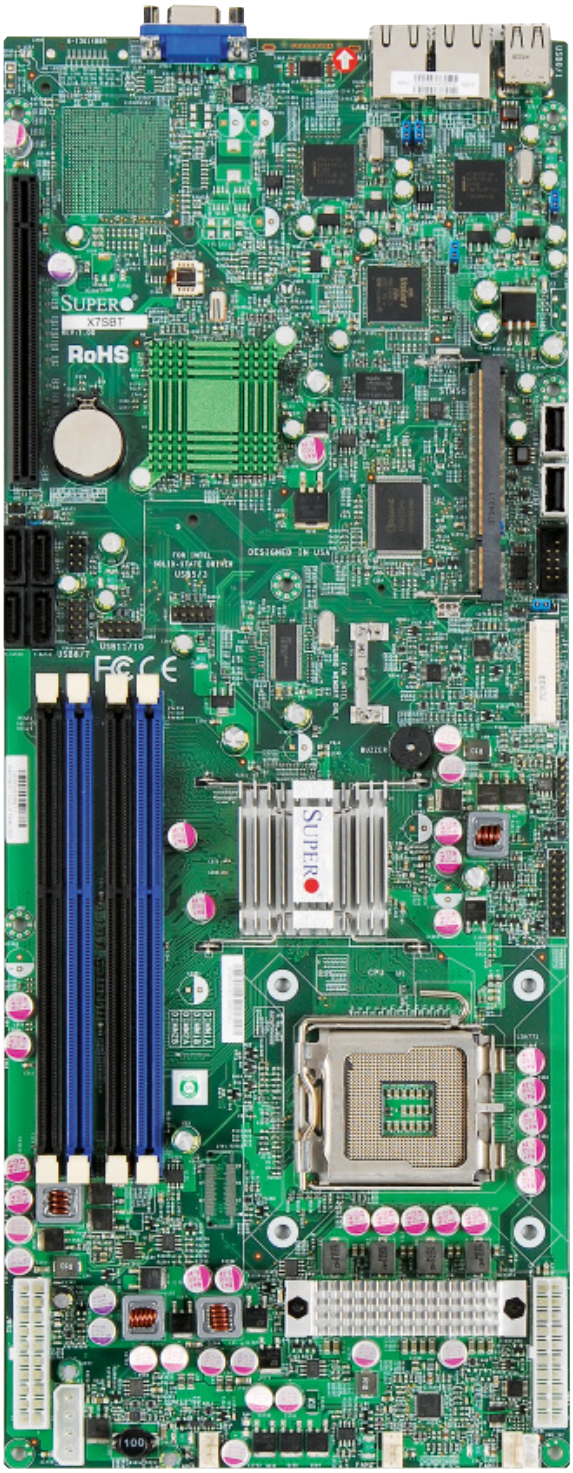
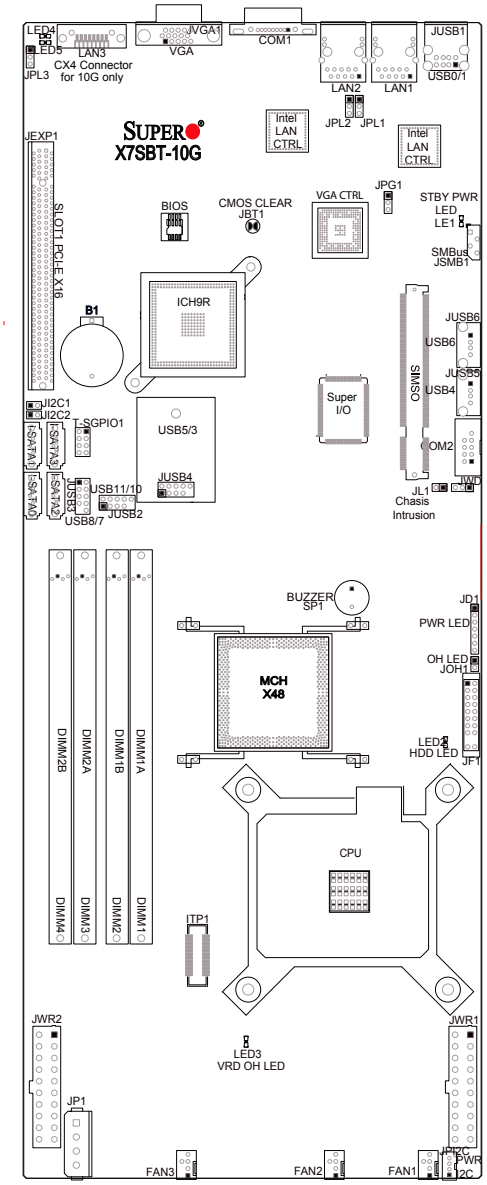
Web Site:	www.supermicro.com.tw
Technical Support:	
Email:	support@supermicro.com.tw
Tel:	886-2-8228-1366, ext.132 or 139

SUPER® X7SBT Image



Note: The drawings and pictures shown in this manual were based on the latest PCB Revision available at the time of publishing of the manual. The motherboard you've received may or may not look exactly the same as the graphics shown in the manual. There is a diffrent image for X7SBT-10G

SUPER® X7SBT Motherboard Layout



Notes:

- Jumpers not indicated are for test purposes only.
- See Chapter 2 for detailed information on jumpers, I/O ports and JF1 front panel connections.
- "■" indicates the location of Pin 1.
- The 10G CX4 connector is only available on the X7SBT-10G.
- You cannot use both 20-pin power connecors located at JWR1 (right side connector), and JWR2 (left side connector) as input power supply connectors at the same time. Only one connector can be used for input power supply to the motherboard at one time. For proper use of these proprietary PWR connectors, please customize your PWR cables based on the power connector pin-out definitions listed on page 2-15.

X7SBT/X7SBT-10G Quick Reference

Jumpers	Description	Default Setting
JBT1	CMOS Clear	See Chapter 2
JI^{2}C1/JI^{2}C2	SMB to PCI Slots	OPEN/OPEN (Disabled)
JPG1	VGA Enable	Pins 1-2 (Enabled)
JPL1/JPL2/JPL3	LAN 1/2/3 Enable (LAN3 is for 10G only)	Pins 1-2 (Enabled)
JWD	Watch Dog Timer	Pins 1-2 (Reset)

Connectors	Description
COM1, COM2	COM1 Port and COM2 Header
Fans 1-3	Fan 1: CPU Fan, Fan 2-3: Chassis Fan Headers
JD1	Speaker Connector
JEXP1	PCI-E x 16 slot
JF1	FP Control Panel Header
JL1	Chassis Intrusion Header
JOH1	Overheat LED Header
JP1	4-Pin Aux. PWR (for output only) (for Hard Drives)
JPI^{2}C	PWR I^{2}C
JSMB1	Power Supply SMbus Header
JUSB1	Back Panel Universal Serial Bus Ports
JUSB5, USB6	Front Accessible USB Headers
JUSB2, JUSB3, JUSB4,	USB Header Ports
JVGA1	Video Graphics Connector
JWR1/JWR2	Primary 20-pin ATX Power Connector
LAN1/LAN2	Ethernet RJ45 (Gigabit LAN) Connectors
LAN3/10GbE	10Gb Ethernet Connector (For X7SBT-10G only)
SATA 0-3	SATA Ports
SIMSO	SIMSO IPMI Socket
SKPR1	Internal Buzzer
T-SGPIO 1	Serial General Purpose Input Output Header

LED Indicator	Description
LED1	Stand By Power LED
LED2	HDD LED
LED3	VRD OH LED
LED4/LED5	10 G LED (for 10G only)

Motherboard Features

CPU

- Single Intel® Xeon® 3000 sequence/Core™ 2 Extreme/Core™ 2 Quad/Core™ 2 Duo processor with a system bus speed of 1600/1333/1066/800 MHz. Memory supports Non-ECC unbuffered 1600 MHz up to 4GB in 2 DIMMs or DDR3 1333/1066/800 MHz up to 8GB in 4 DIMMs
- Supports Intel® Dual Core Technology, Wide Dynamic Execution, FSB Dynamic Bus Inversion (DBI), Advanced Digital Media Boost, Smart Memory Access, and Thermal Management 2 (TM2)

Memory

- Four DIMM slots support non-ECC Unbuffered Dual/Single Channel DDR3 1600 MHz up to 4GB in 2 DIMMs or DDR3 1333/1066/800 MHz up to 8GB in 4 DIMMs

Note: X7SBT supports DDR3 up to 1600 MHz. You can only install up to two 1600 MHz modules with one module in DIMM1B slot or DIMM2B slot or with two modules in both DIMM1B and DIMM2B slots

Chipset

- Intel® X48 (North Bridge), and Intel® ICH9R (South Bridge)

Expansion Slots

- One PCI-Exp. x16 slot (JEXP1)
- One SIMSO IPMI Slot

BIOS

- 16 Mb Firmware Hub Phoenix BIOS
- DMI 2.3, PCI 2.2, ACPI 1.0 (limited) and ACPI 2.0, Plug and Play (PnP), USB Keyboard support, and Hardware BIOS Virus Protection

PC Health Monitoring

- Onboard voltage monitors for CPU cores, Memory voltage, +1.8V, +3.3V, +5V, +5V standby, +12V, -12V, VBAT, HT, Memory, and Chipset.
- Platform Environment Control Interface (PECI) ready
- CPU 4-phase-switching voltage regulator
- Status monitor for fan speed and System OH/Fan Fail LED/Control
- Environmental temperature monitoring via BIOS
- Power-up mode control for recovery from AC power loss
- SuperDoctor III, NMI
- System Resource Alert via SuperDoctor III

- Slow blinking LED for suspend state indicator
- BIOS support for USB keyboard
- Main switch override mechanism

ACPI Features

- Slow blinking LED for suspend state indicator
- Main switch override mechanism
- BIOS support for USB keyboard
- Internal/external modem ring-on

Onboard I/O

- Four SATA ports (supporting RAID 0, 1,10 and 5 in the Windows OS environment; RAID 0, 1 and 10 in Linux)
- One SIMSO IPMI socket
- Intel® 82573V and 82573L LAN chips support two Giga-bit LAN ports and Intel® 82598EB with CX4 interface
- Up to 8 USB ports (two rear ports, four headers, and two on-board connectors)
- Super I/O: Winbond W83627DHG

Temperature

- Monitoring CPU, chassis environment
- I^2C temperature sensing logic

Other

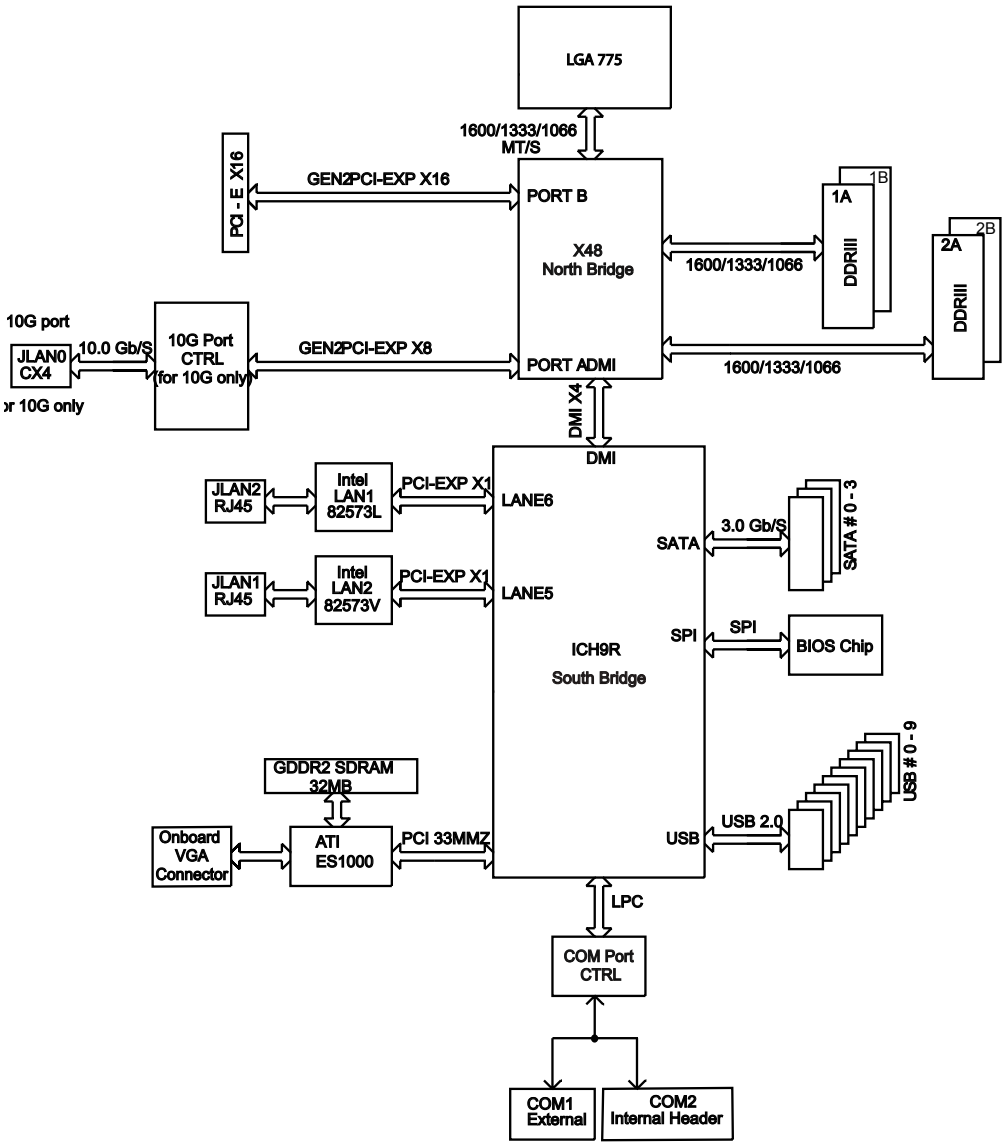
- Console redirection
- Onboard Fan Speed Control by Thermal Management via BIOS

CD/Diskette Utilities

- BIOS flash upgrade utility and device drivers

Dimensions

- 16 (L) x 6.5" (W) (40.64 cm x 16.51 cm)



X7SBT/X7SBT-10G
System Block Diagram

Note: This is a general block diagram. Please see the previous Motherboard Features pages for details on the features of each motherboard.

1-2 Chipset and Processor Features Overview

The Intel® X48 Express chipset, designed for use with an ntel® Xeon® 3000 sequence/Core™ 2 Extreme/Core™ 2 Quad/Core™ 2 Duo processor in the LGA 775 Land Array Package, is comprised of two primary components: the Memory Controller Hub (North Bridge) and the I/O Controller Hub (South Bridge). The X7SBT/X7SBT - 10G provides the performance and feature-set required for the mainstream server market.

Memory Controller Hub (X48/North Bridge)

The function of the MCH is to manage the data flow between four interfaces: the CPU interface, the DDR3 System Memory Interface, the PCI Express Interface, and the Direct Media Interface (DMI). The MCH is optimized for the Intel® Xeon® 3000/3200 series processor in the LGA775 Land Grid Array package. Four DIMM slots support non-ECC Unbuffered Dual/Single Channel DDR3 1600 MHz up to 4GB in 2 DIMMs or DDR3 1333/1066/800 MHz up to 8GB in 4 DIMMs

The Ninth Generation I/O Controller Hub (ICH9R/South Bridge)

The I/O Controller ICH9R provides the data buffering and interface arbitration required for the system to operate efficiently. It also provides the bandwidth needed for the system to maintain its peak performance. The Direct Media Interface (DMI) provides the connection between the MCH and the ICH9R. The ICH9R supports one PCI-Express device, four Serial ATA ports and up to six USB 2.0 portsheaders. In addition, the ICH9R offers the Intel Matrix Storage Technology which provides various RAID options for data protection and rapid data access. It also supports next generation of client management through the use of PROActive technology in conjunction with Intel's next generation Gigabit Ethernet controllers.

The I/O Controller Hub provides the I/O subsystem with access to the rest of the system. Functions and capabilities include

- Advanced Configuration and Power Interface
- Intel® I/O External Design Specification (EDS)
- Intel® X48 (Memory Controller Hub) External Design Specification (EDS)
- Intel® ICH9R (I/O Controller Hub 9) Thermal Design Guideline
- Intel® 82573 Platform LAN Connect (PLC) PCI Design

1-3 Special Features

Recovery from AC Power Loss

BIOS provides a setting for you to determine how the system will respond when AC power is lost and then restored to the system. You can choose for the system to remain powered off (in which case you must hit the power switch to turn it back on) or for it to automatically return to a power- on state. See the Power Lost Control setting in the Advanced BIOS Setup section to change this setting. The default setting is **Last State**.

1-4 PC Health Monitoring

This section describes the PC health monitoring features of the X7SBT/X7SBT-10G. All have an onboard System Hardware Monitor chip that supports PC health monitoring.

Voltage Monitoring

An onboard voltage monitor will scan the CPU Core, Chipset, +1.5V, +3.3V, +5V, +12V, +5V Standby and VBAT voltages continuously. Once a voltage becomes unstable, a warning is given or an error message is sent to the screen.

Fan Status Monitor with Firmware Control

The PC health monitor can check the RPM status of the cooling fans. The onboard CPU and chassis fans are controlled by Thermal Management via BIOS (under Hardware Monitoring in the Advanced Setting).

Environmental Temperature Control

The thermal control sensor monitors the CPU temperature in real time and will turn on the thermal control fan whenever the CPU temperature exceeds a user-defined threshold. The overheat circuitry runs independently from the CPU. Once it detects that the CPU temperature is too high, it will automatically turn on the thermal fan control to prevent any overheat damage to the CPU. The onboard chassis thermal circuitry can monitor the overall system temperature and alert users when the chassis temperature is too high.

System Resource Alert

This feature is available when used with Supero Doctor III in the Windows OS environment or used with Supero Doctor II in Linux. Supero Doctor is used to notify the user of certain system events. For example, if the system is running low on virtual memory and there is insufficient hard drive space for saving the data, you can be alerted of the potential problem. You can also configure Supero Doctor to provide you with warnings when the system temperature goes beyond a pre-defined range.

1-5 ACPI Features

ACPI stands for Advanced Configuration and Power Interface. The ACPI specification defines a flexible and abstract hardware interface that provides a standard way to integrate power management features throughout a PC system, including its hardware, operating system and application software. This enables the system to automatically turn on and off peripherals such as CD-ROMs, network cards, hard disk drives and printers. This also includes consumer devices connected to the PC such as VCRs, TVs, telephones and stereos.

In addition to enabling operating system-directed power management, ACPI provides a generic system event mechanism for Plug and Play and an operating system-independent interface for configuration control. ACPI leverages the Plug and Play BIOS data structures while providing a processor architecture-independent implementation that is compatible with Windows 2000, Windows XP, Windows Vista and Windows 2003 Servers operating systems.

Slow Blinking LED for Suspend-State Indicator

When the CPU goes into a suspend state, the chassis power LED will start blinking to indicate that the CPU is in suspend mode. When the user presses any key, the CPU will wake-up and the LED will automatically stop blinking and remain on.

Main Switch Override Mechanism

When a power supply is used, the power button can function as a system suspend button to make the system enter a SoftOff state. The monitor will be suspended and the hard drive will spin down. Pressing the power button again will cause the whole system to wake-up. During the SoftOff state, the power supply provides power to keep the required circuitry in the system alive. In case the system malfunctions and you want to turn off the power, just press and hold the power button for 4 seconds. This option can be set in the Power section of the BIOS Setup routine.

1-6 Power Supply

As with all computer products, a stable power source is necessary for proper and reliable operation. It is even more important for processors that have high CPU clock rates.

The X7SBT/X7SBT-10G can only accommodate Supermicro proprietary power supplies.

Chapter 2

Installation

2-1 Static-Sensitive Devices

Electrostatic discharge (ESD) can damage electronic components. To prevent damage to your system board, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Handle the board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the motherboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. Do not install the onboard battery upside down to avoid possible explosion.

Unpacking

The motherboard is shipped in antistatic packaging to avoid static damage. When unpacking the board, make sure the person handling it is static protected.

2-2 Motherboard Installation

Note: Be sure to mount the motherboard into the chassis before you install the CPU onto the motherboard.

All motherboards have standard mounting holes to fit different types of chassis. Make sure that the locations of all the mounting holes for both motherboard and chassis match. Make sure that the metal standoffs click in or are screwed in tightly. Then use a screwdriver to secure the motherboard onto the motherboard tray.

Note: Some components are very close to the mounting holes. Please take precautionary measures to prevent damage to these components when installing the motherboard to the chassis.

Caution: To avoid damaging the motherboard and its components, please do not use a force greater than 8 lb/inch on each mounting screw during motherboard installation.

2-3 Processor and Heatsink Installation

Warning: When handling the processor package, avoid placing direct pressure on the label area of the fan.

Notes:

1. Always connect the power cord last and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU LGA 775 socket before you install the CPU heatsink.

2. The Intel LGA 775 Processor package contains the CPU fan and heatsink assembly. If you buy a CPU separately, make sure that you use only Intel-certified multi-directional heatsink and fan.

3. Make sure to install the motherboard into the chassis before you install the CPU heatsink and fan.

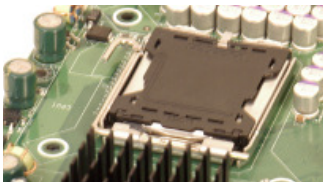
4. When purchasing an LGA 775 Processor or when receiving a motherboard with an LGA 775 Processor pre-installed, make sure that the CPU plastic cap is in place and none of the CPU pins are bent; otherwise, contact the retailer immediately.

5. Refer to the MB Features Section for more details on CPU support.

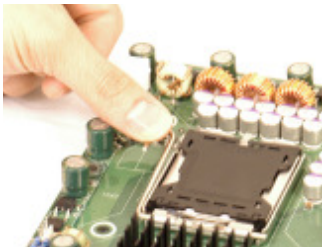
Installing the LGA 775 Processor

Load Lever

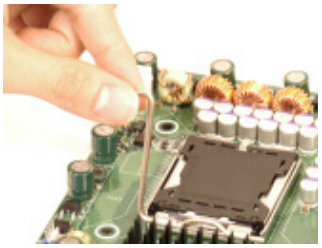
PnP Cap on top of the Load Plate



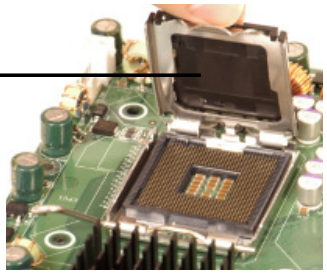
1. Press the load lever to release the load plate, which covers the CPU socket, from its locking position.



2. Gently lift the load lever to open the load plate.

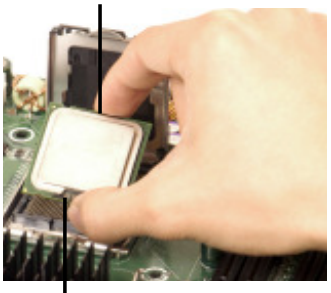


Load Plate (with PnP Cap attached)



3. Use your thumb and your index finger to hold the CPU at the top center edge and the bottom center edge of the CPU.

Top Center Edge



Bottom Center Edge

4. Align CPU Pin1 (the CPU corner marked with a triangle) against the socket corner that is marked with a triangle cutout.

5. Align the CPU key that is the semi-circle cutout below a golden dot against the socket key, the Notch on the same side of the triangle cutout on the socket.

6. Once aligned, carefully lower the CPU straight down to the socket. (Do not drop the CPU on the socket. Do not move the CPU horizontally or vertically. Do not rub the CPU against the surface or against any pins of the socket to avoid damage to the CPU or the socket.)

7. With the CPU inside the socket, inspect the four corners of the CPU to make sure that the CPU is properly installed.

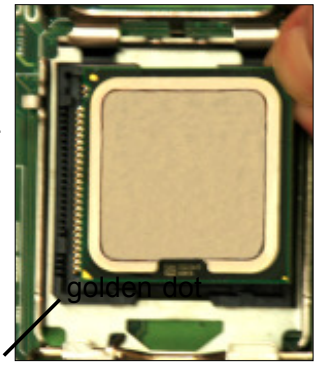
8. Use your thumb to gently push the load lever down to the lever lock.

9. If the CPU is properly installed into the socket, the plastic PnP cap will be automatically released from the load plate when the load lever is pushed in the lever lock. Remove the PnP cap from the motherboard.

Warning: Please save the plastic PnP cap. The motherboard must be shipped with the PnP cap properly installed to protect the CPU socket pins. Shipment without the PnP cap properly installed will cause damage to the socket pins.

Socket Key (Socket Notch)

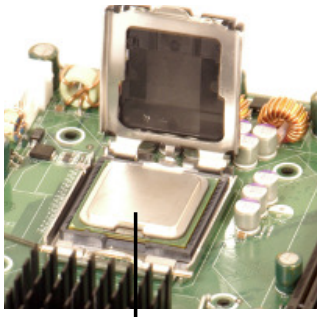
CPU Key (semi-circle cutout) below the circle.



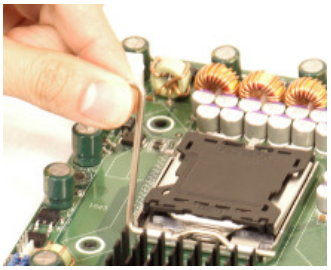
Corner with a triangle cutout

CPU Pin1

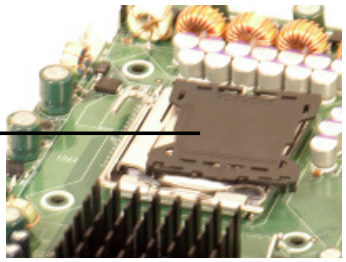
Load Lever



CPU in the CPU socket



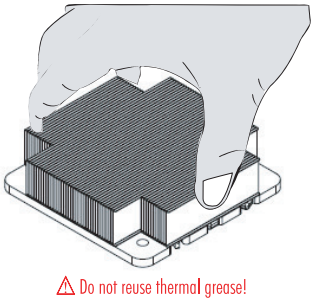
Plastic cap is released from the load plate if CPU properly installed.



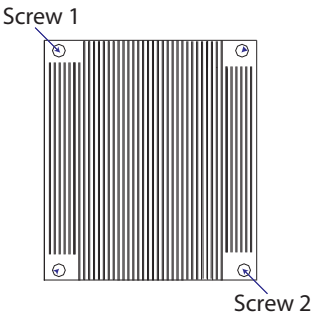
Installing the Heatsink

1. Do not apply any thermal grease to the heatsink or the CPU die, the required amount has already been applied.

2. Place the heatsink on top of the CPU so that the four mounting holes are aligned with those on the retention mechanism.



3. Screw in two diagonal screws (eg. the #1 and the #2 screws) until just snug (do not fully tighten the screws, which may damage the CPU).

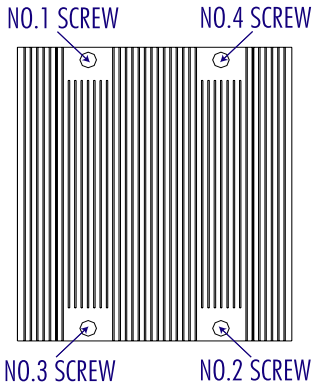


4. Finish the installation by fully tightening all four screws.

Removing the Heatsink

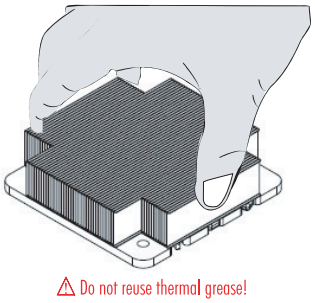
Warning: We do not recommend that the CPU or the heatsink be removed. However, if you do need to uninstall the heatsink, please follow these instructions below to prevent damage to the CPU or the CPU socket.

1. Unscrew and remove the heatsink screws from in the sequence as show in the picture on the right.



2. Hold and gently wriggle the heatsink to loosen it from the CPU. (Do not use excessive force when loosening the heatsink!)

3. Once the heatsink is loosened, remove it from the CPU socket.



4. Clean the surfaces of the CPU and the heatsink to remove the old thermal grease. Reapply the proper amount of thermal grease on the surface before re-installing the CPU and the heatsink.

2-4 Installing DIMMs

Note: Check the Supermicro web site for recommended memory modules.

Warning: Exercise extreme care when installing or removing DIMM modules to prevent any possible damage. Also note that the memory is interleaved to improve performance

Memory Support

This motherboard supports non-ECC Unbuffered Dual/Single Channel DDR3 1600 MHz up to 4GB in 2 DIMMs or DDR3 1333/1066/800 MHz up to 8GB in 4 DIMMs (See notes 2 and 3). Populating DIMM1A, DIMM2A, and/or DIMM1B, DIMM2B with memory modules of the same size and of the same type will result in dual channel, two-way interleaved memory which is faster than the single channel, non-interleaved memory.

Notes:

1. Due to the OS limitations, some operating systems may not show more than 4GB of memory.

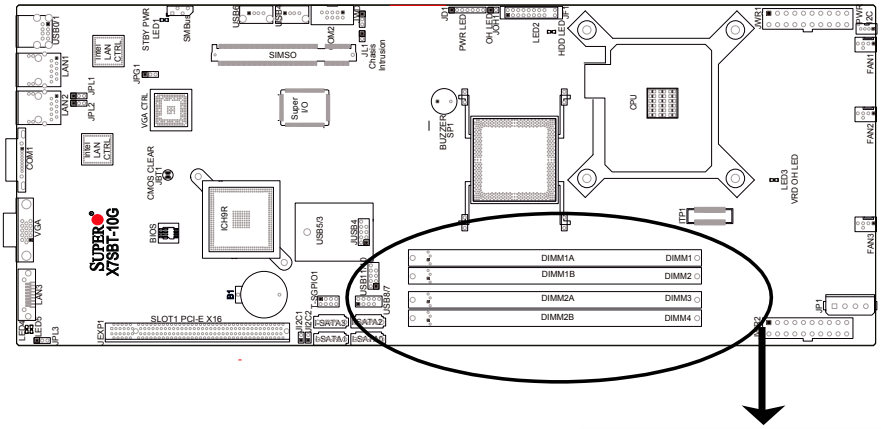
2. Both Unbuffered ECC and Non-ECC memory modules will boot up. However, ECC functionality is not supported on this board.

3. The X7SBT/X7SBT-10G supports DDR3 up to 1600 MHz. You can only install up to two 1600 MHz modules with one module in DIMM1B slot or DIMM2B slot or with two modules in both DIMM1B and DIMM2B slots

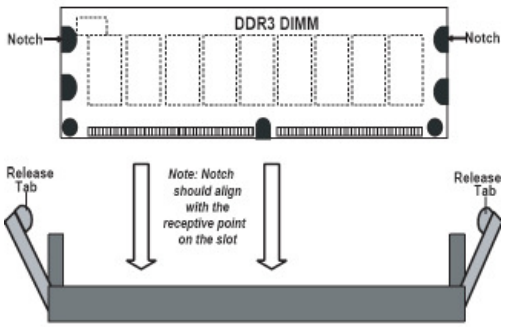
4. Due to memory allocation to system devices, memory remaining available for operational use will be reduced when 4 GB of RAM is used. The reduction in memory availability is disproportional. See chart on following page. For Microsoft Windows users: Microsoft implemented a design change in Windows XP with Service Pack 2 (SP2) and Windows Vista. This change is specific to the Physical Address Extension (PAE) mode behavior which improves driver compatibility. For more information, please read the following article at Microsoft's Knowledge Base website at: http://support.microsoft.com/kb/888137.

Possible System Memory Allocation & Availability		
System Device	Size	Physical Memory Remaining (-Available) (4 GB Total System Memory)
Firmware Hub flash memory (System BIOS)	1 MB	3.99
Local APIC	4 KB	3.99
Area Reserved for the chipset	2 MB	3.99
I/O APIC (4 Kbytes)	4 KB	3.99
PCI Enumeration Area 1	256 MB	3.76
PCI Express (256 MB)	256 MB	3.51
PCI Enumeration Area 2 (if needed) -Aligned on 256-MB boundary-	512 MB	3.01
VGA Memory	16 MB	2.85
TSEG	1 MB	2.84
Memory available to OS and other applications		2.84

Installing and Removing DIMMs



To Install: Insert module vertically and press down until it snaps into place. Pay attention to the alignment notch at the bottom.

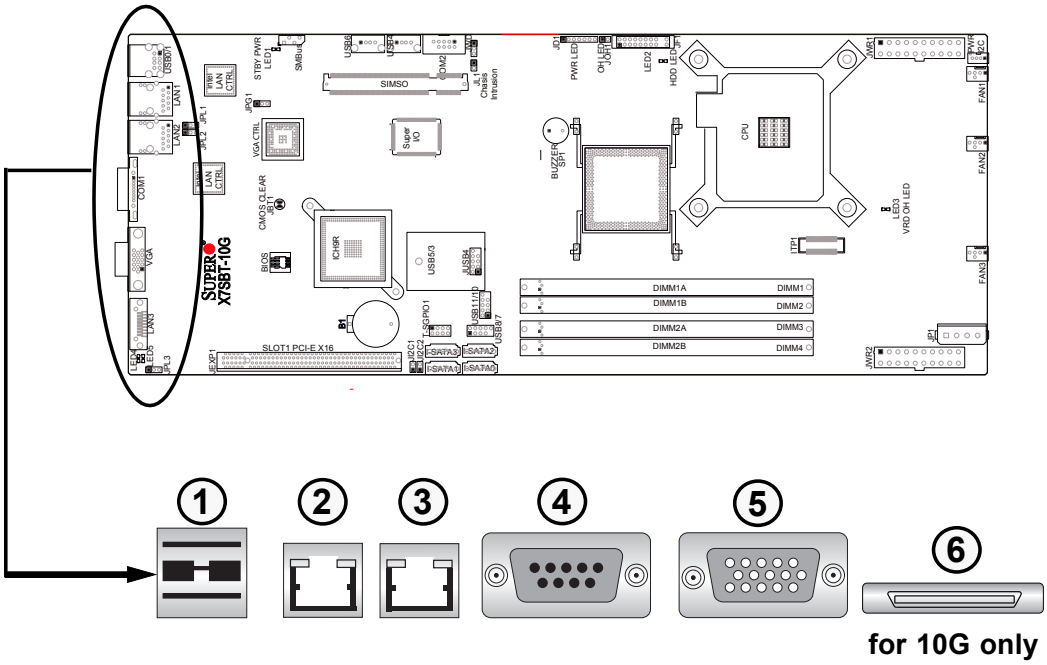


To Remove:
Use your thumbs to gently push the release tabs near both ends of the module. This should release it from the slot.

2-5 Control Panel Connectors /IO Ports

The I/O ports are color coded in conformance with the PC 99 specification. See the graphics below for the colors and locations of the various I/O ports.

Back Panel Connectors/IO Ports



Back Panel I/O Port Locations and Definitions

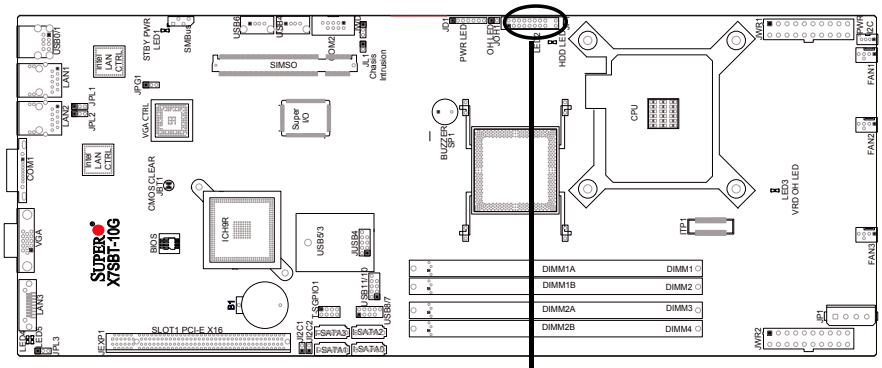
Back Panel Connectors

1. Back Panel USB Port 0/USB Port 1
2. Gigabit LAN 1
3. Gigabit LAN 2
4. COM 1 Port
5. VGA Port (Blue)
6. 10G LAN port (for 10G only)

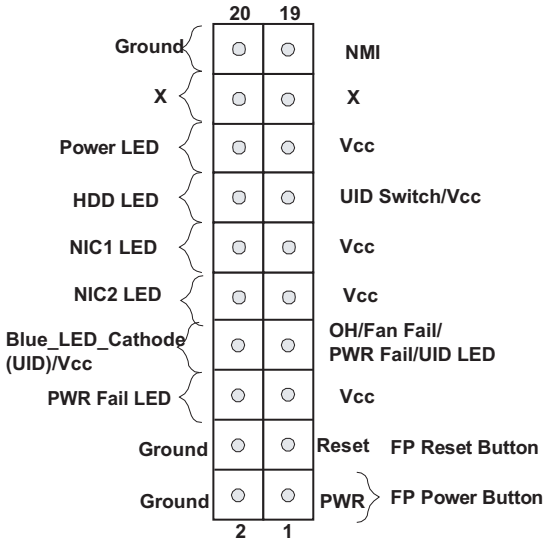
Front Control Panel

JF1 contains header pins for various buttons and indicators that are normally located on a control panel at the front of the chassis. These connectors are designed specifically for use with Supermicro server chassis. See the figure below for the descriptions of the various control panel buttons and LED indicators. Refer to the following section for descriptions and pin definitions.

Front Control Panel Header (JF1) Pins



Header Pins



Front Control Panel Pin Definitions

NMI Button

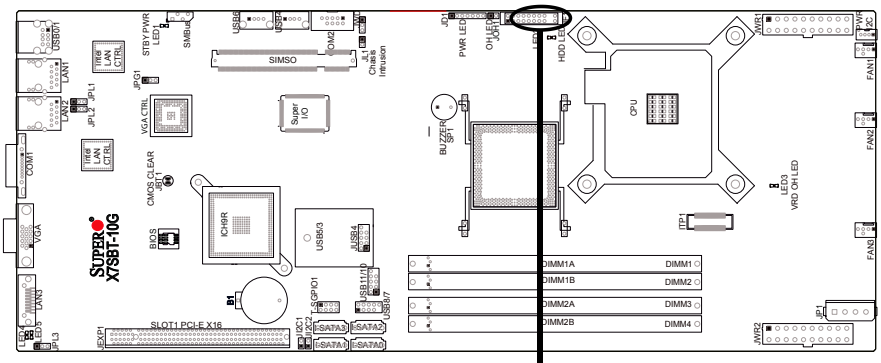
The non-maskable interrupt button header is located on pins 19 and 20 of JF1. Refer to the table on the right for pin definitions.

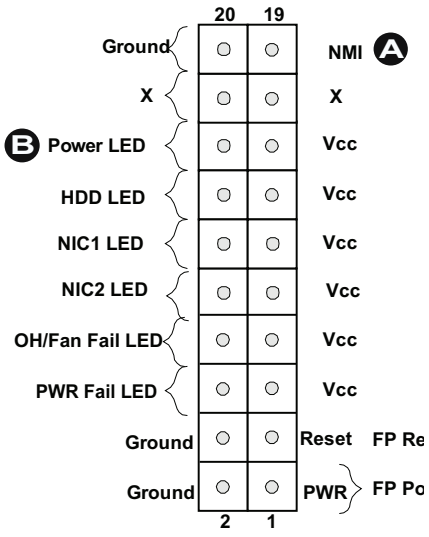
NMI Button Pin Definitions (JF1)	
Pin#	Definition
19	NMI Control
20	Ground

Power LED

The Power LED connection is located on pins 15 and 16 of JF1. Refer to the table on the right for pin definitions.

Power LED Pin Definitions (JF1)	
Pin#	Definition
15	+5V
16	Ground





A. NMI

B. PWR LED

HDD LED

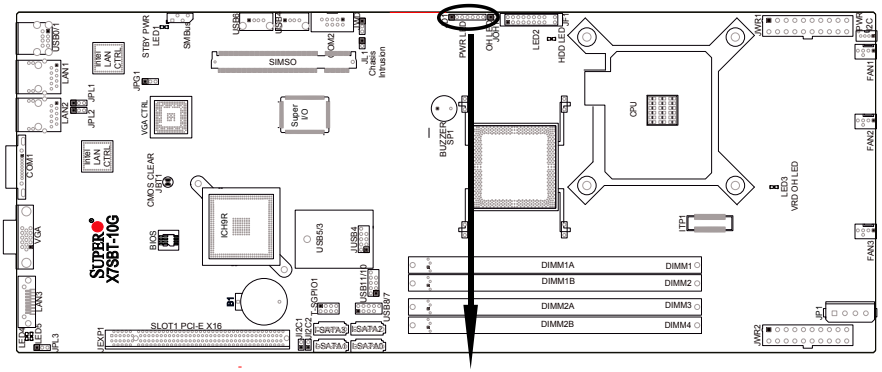
The HDD LED connection is located on pins 13 and 14 of JF1. Attach a hard drive LED cable here to display disk activity. See the table on the right for pin definitions.

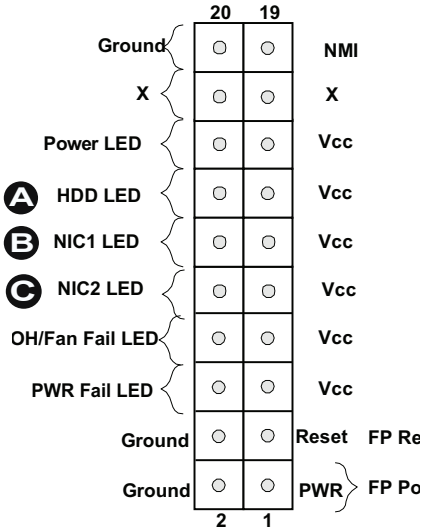
HDD/UID LED Pin Definitions (JF1)	
Pin#	Definition
13	3.3 Vcc
14	HD Active

NIC1/NIC2 LED Indicators

The NIC (Network Interface Controller) LED connection for LAN port1 is located on pins 11 and 12 of JF1 and the LED connection for LAN Port2 is on Pins 9 and 10. Attach the NIC LED cables to display network activity. Refer to the table on the right for pin definitions.

LAN1/2 LED Pin Definitions (JF1)	
Pin#	Definition
9/11	3.3 Vsb
10/12	NIC Active





A. HDD LED
B. NIC1 LED
C. NIC2 LED

Overheat/Fan Fail LED (OH)

Connect an LED to the OH/Fan Fail connection on pins 7 and 8 of JF1 to provide advanced warnings of chassis overheating or fan failure. Refer to the table on the right for pin definitions.

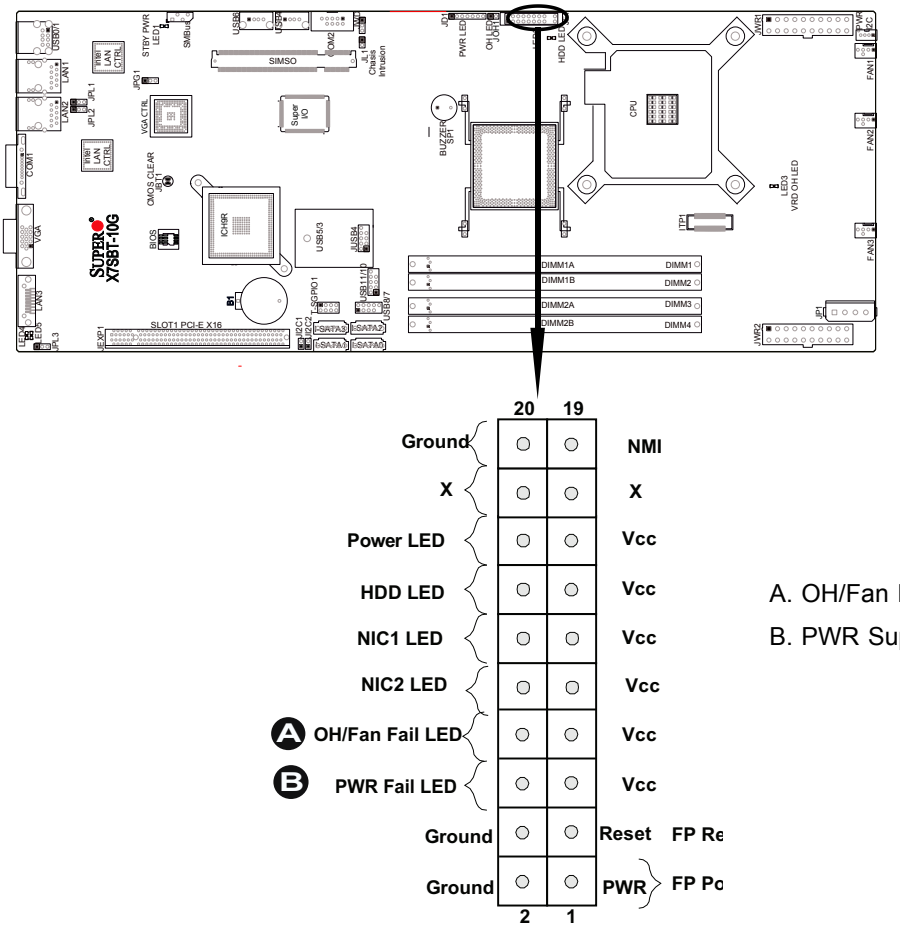
OH/Fan Fail LED Pin Definitions (JF1)	
Pin#	Definition
7	3.3 Vcc
8	OH/Fan Fail LED Indicator

OH/Fan Fail Indicator Status	
State	Definition
Off	Normal
On	Overheat
Flash-ing	Fan Fail

Power Fail LED

The Power Fail LED connection is located on pins 5 and 6 of JF1. Refer to the table on the right for pin definitions.

PWR Fail LED Pin Definitions (JF1)	
Pin#	Definition
5	5 Vcc
6	PWR Fail Indicator



A. OH/Fan Fail LED
B. PWR Supply Fail

Reset Button

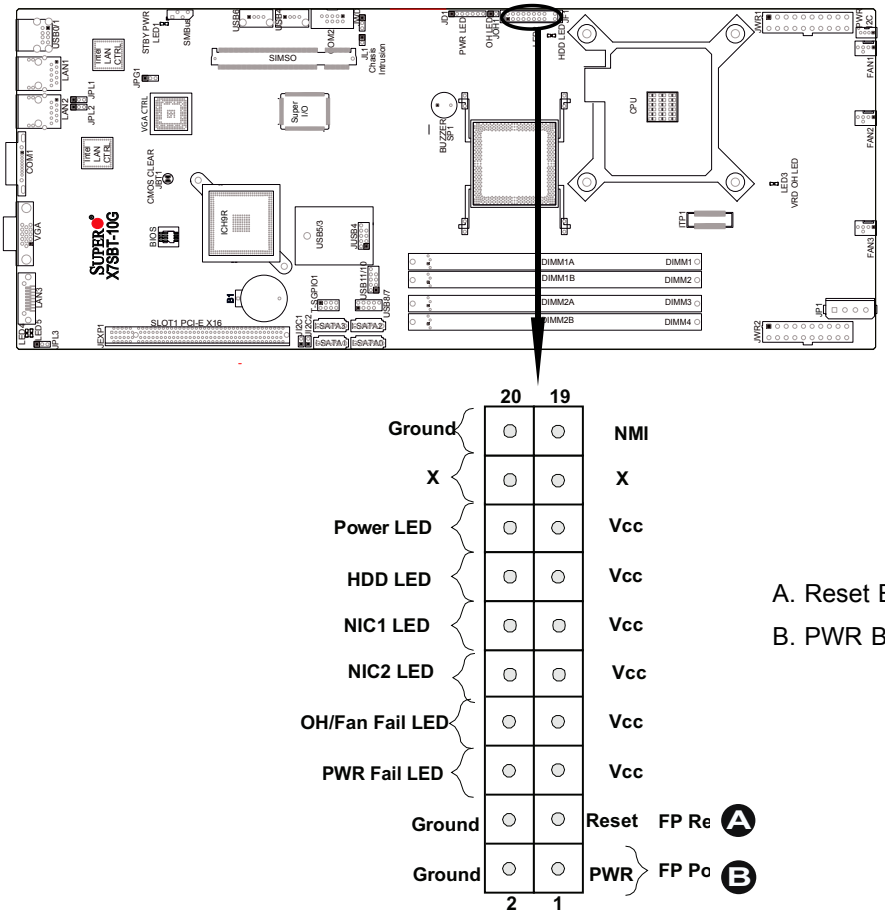
The Reset Button connection is located on pins 3 and 4 of JF1. Attach it to the hardware reset switch on the computer case. Refer to the table on the right for pin definitions.

Reset Button Pin Definitions (JF1)	
Pin#	Definition
3	Reset Signal
4	Ground

Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS - see Chapter 4). To turn off the power when set to suspend mode, press the button for at least 4 seconds. Refer to the table on the right for pin definitions.

Power Button Pin Definitions (JF1)	
Pin#	Definition
1	PWR Button Signal
2	Ground



A. Reset Button

B. PWR Button

2-6 Connecting Cables

20-pin Proprietary Power Connectors

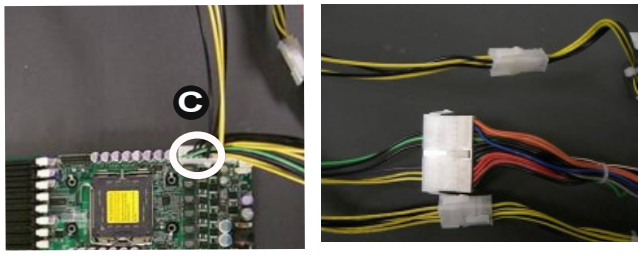
There are two 20-pin main power supply connectors (JWR1, JWR2) and a 4-pin auxiliary power connector (JP1) on the motherboard. These power connectors meet the SSI EPS 12V specification. For power supply to work properly, please follow the instructions given below. See the table on the right for pin definitions. Also refer to the layout below for the PWR connector locations.

20-pin Main Power Connector Pin Definitions

Pin#	Definition	Pin #	Definition
11	PS On	1	Ground
12	5VSB	2	Ground
13	Ground	3	Ground
14	Ground	4	Ground
15	Ground	5	Ground
16	NC2	6	NC1
17	12V	7	12V
18	12V	8	12V
19	12V	9	12V
20	12V	10	12V

Note 1: You cannot use both 20-pin power connectors located at JWR1 (the right connector) and JWR2 (the left connector) as input power supply connectors at the same time. Only one connector can be used for input power supply to the motherboard at a time. For proper use of these proprietary PWR connectors, please customize your PWR cables based on the SMC PWR connector pin-out definitions listed above.

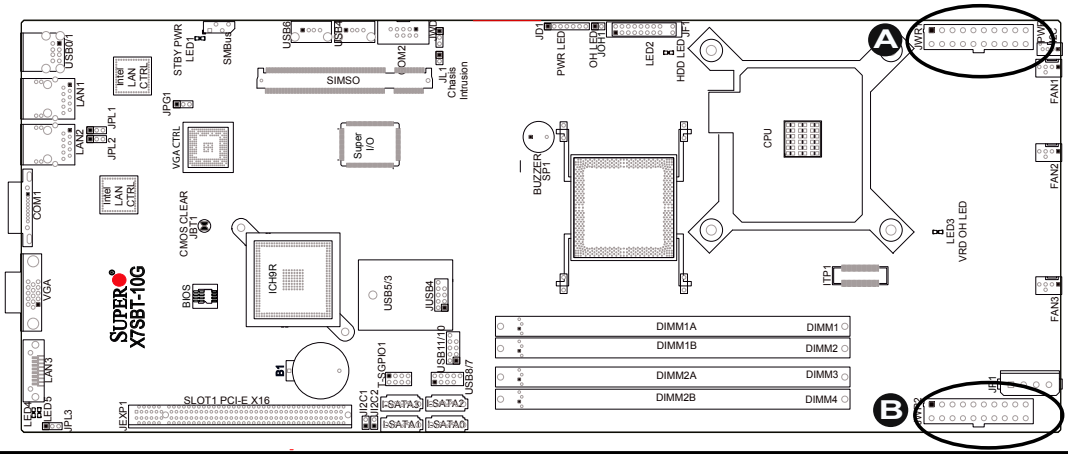
Note 2: The black square (dot) on a power connector indicates the location of Pin 1. (See the pictures below for the power cable connections.)



A. The right 20-pin PWR connector: (JWR1)

B. The left 20-pin PWR connector: (JWR2)

C. 20-pin PWR cable



4-pin Auxiliary Power Connector

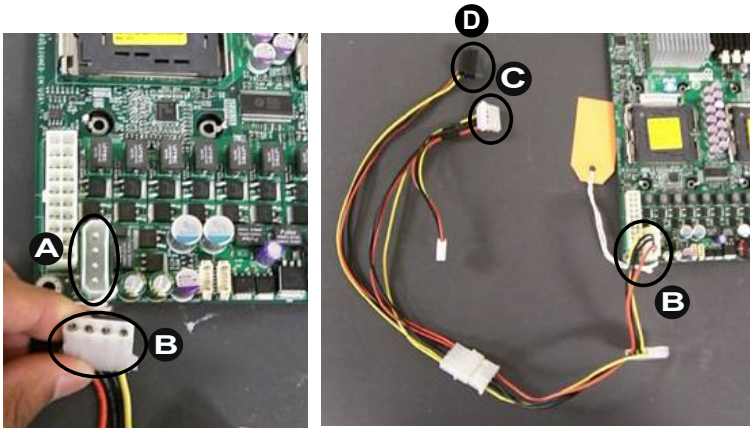
In addition to two 20-pin power connectors, a 4-pin 12V PWR supply is located at JP1 on the motherboard. This power connector is used to provide power supply to hard drive disks. Refer to the layout below for the location.

Note 1: The 4-pin Auxiliary Power Connector is used for power supply output to the HDDs only.

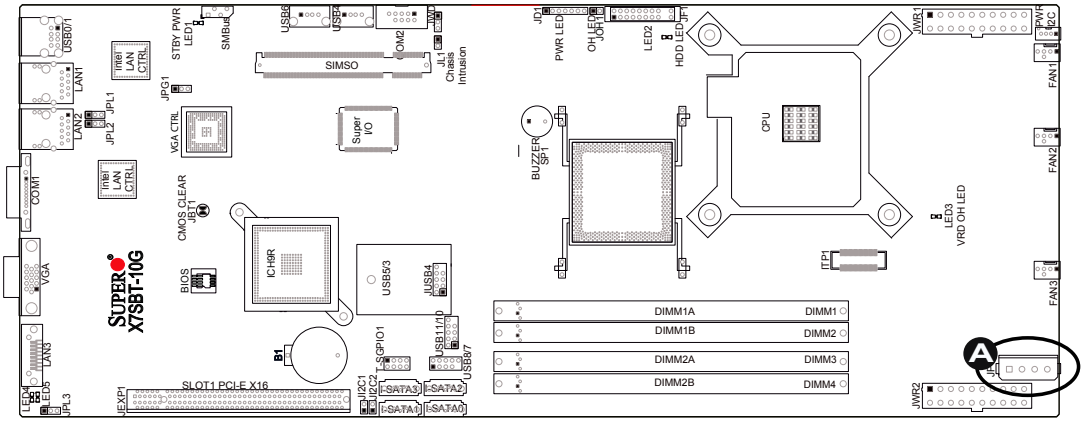
Note 2: The black square (dot) on the power connector indicates the location of Pin 1. (See the pictures below for the power cable connections.)

4-Pin Power Pin Definitions	
Pin #	Definition
1	+12V
2	Ground
3	Ground
4	+5V

Required Connection



A. 4-pin Aux. PWR
B. One Male (Receptacle) PWR Connector
C.& D. Two Female PWR Connectors



Universal Serial Bus (USB)

There are eight USB 2.0 (Universal Serial Bus) ports/headers on the motherboard. Two of them are Back Panel USB ports: USB 0/1 (JPUSB1). Two are Front Accessible USB ports USB4, USB6 (JUSB5, JUSB6 resp). Four header ports; USB8/7, USB11/10 (JUSB3, JUSB2 resp). There are two ports USB5/3 (JUSB4) reserved for Intel Sloid State Drive. There is one USB port (USB9) embedded in IPMI slot. and one USB port (USB2) embedded in mini PCI-E

Back Panel USB 0/1 (JUSB1)	
Pin#	Definitions
1	+5V
2	PO-
3	PO+
4	Ground
5	N/A

Header & Front Accessible USB Pin Definitions (JUSB2,JUSB3, JUSB4, JUSB5, JUSB6)			
USB3, USB8, USB10		USB5, USB7, USB11	
Pin #	Definition	Pin #	Definition
1	+5V	1	+5V
2	PO-	2	PO-
3	PO+	3	PO+
4	Ground	4	Ground
5	Key	5	No connection

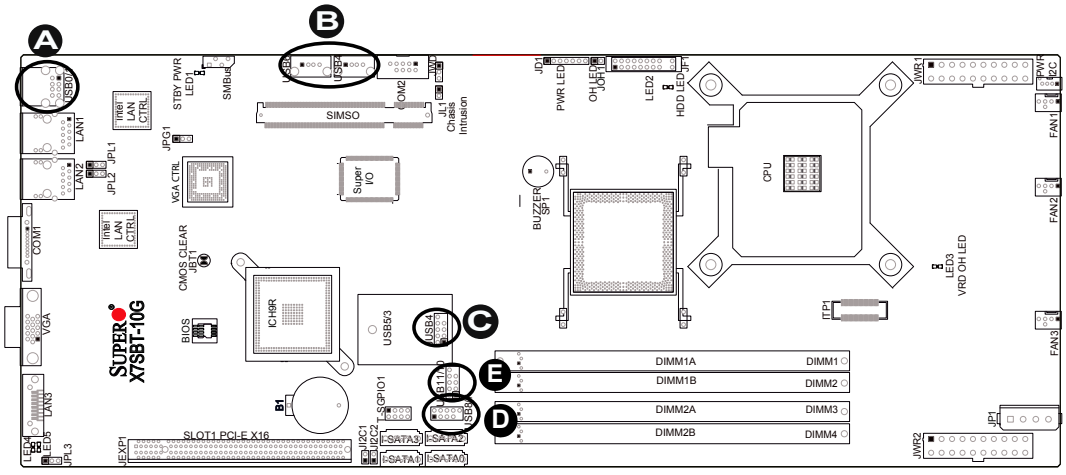
A. Backpanel USB0/1

B. Front Accessible USB4, USB6

C. Header port USB5/3

D. Header port USB8/7

E. Header port USB11/10



Fan Headers

The X7SBT/X7SBT-10G has three system fan headers (Fans 1 to Fan 3) that support 4-pin fans. See the table on the right for pin definitions.

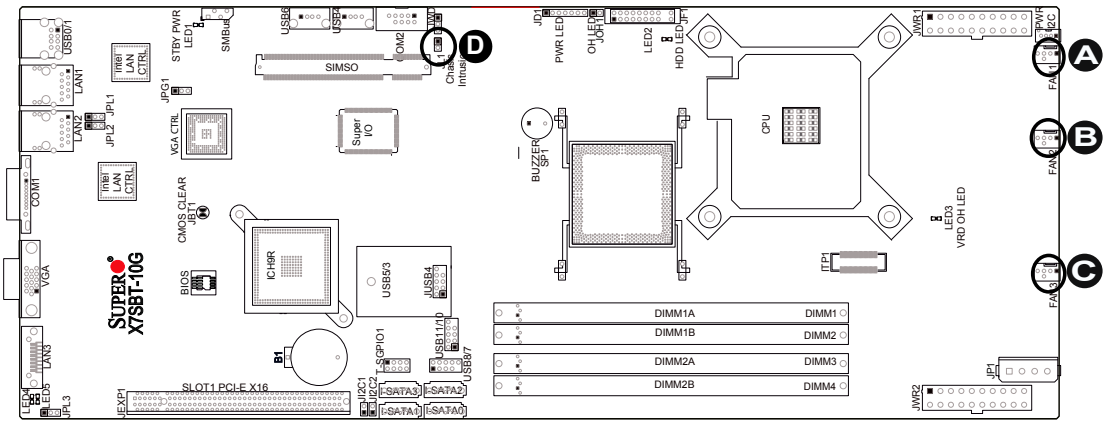
Note: The onboard fan speeds are controlled by Thermal Management via BIOS Hardware Monitoring in the Advanced Setting. (The default setting is **Disabled**.)

4-pin Fan Header Pin Definitions	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer
4	PWR Modulation

Chassis Intrusion

A Chassis Intrusion header is located at JL1 on the motherboard. Attach an appropriate cable from the chassis to inform you of a chassis intrusion when it is opened.

A. Fan1
B. Fan2
C. Fan3
D. Chasis Intrusion



Serial Port

COM1 (U15) is located at the IO backpanel and COM2 is a header located at U16. See the table on the right for pin defintions

Serial Port Pin Definitions			
Pin #	Definition	Pin #	Definition
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	Ground	10	NC

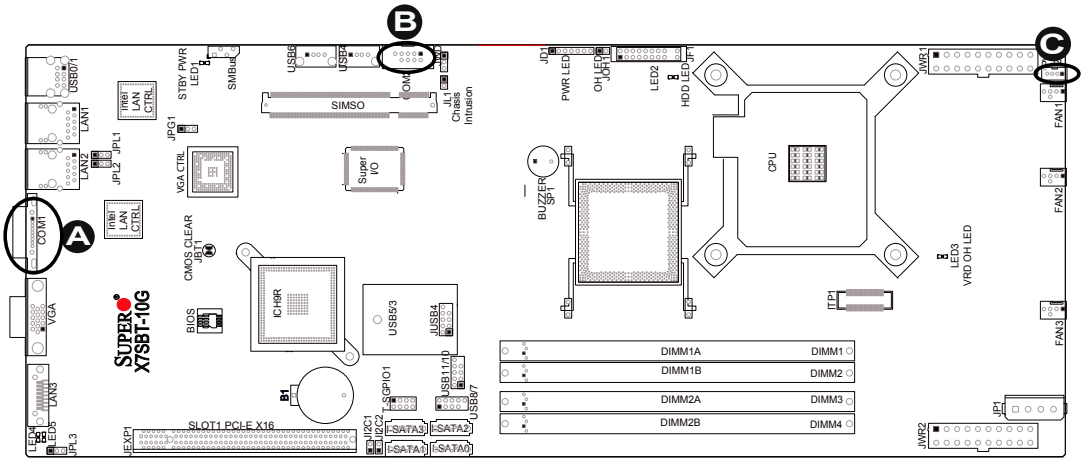
(Pin 10 is available on COM2 only. NC: No Connection)

Power Supply I²C Connector

Power Supply (I²C) Connector (JPI2C) monitors the status of the power supply, fan and system temperature. See the table on the right for pin definitions.

PWR Supply I²C Pin Definitions	
Pin#	Definition
1	Clock
2	Data
3	PWR Fail
4	Ground

A. COM1 Port
B. COM2 Port
C. PWR Supply I²C



GLAN 1/2 (Giga-bit Ethernet Ports)

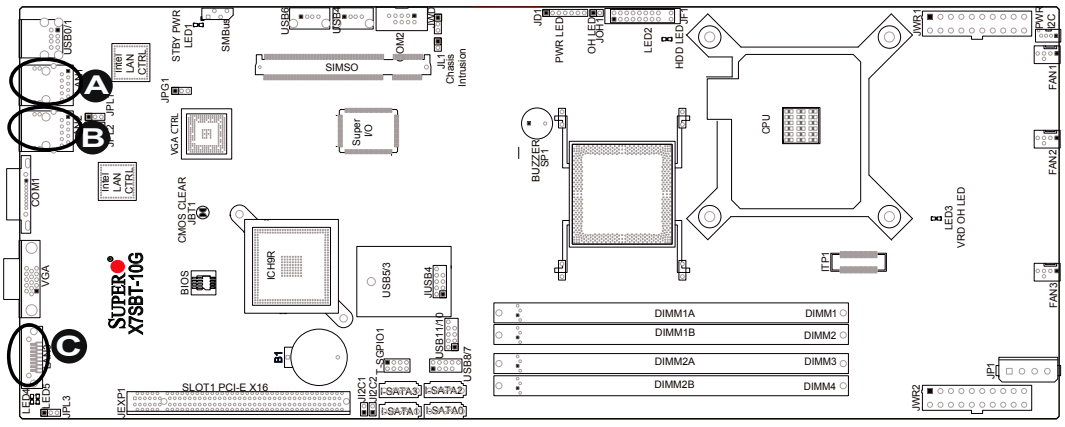
Two Gigabit Ethernet ports are located at LAN1/LAN2 on the I/O backplane. These ports accept RJ45 type cables.

GLAN1 GLAN2

10Gb_LAN Port (For X7SBT-10G Only)

In addition to the two GLAN ports mentioned above, a 10_ Gigabit LAN w/CX4 interface is located at LAN3 on the I/O backplane. Refer to the layout below for the locations of the LAN ports.

A. Gb_LAN1
B. Gb_LAN2
C. 10 Gb_LAN (for 10G only)



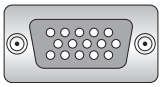
SMB

A System Management Bus header is located at JSMB1. Connect the appropriate cable to utilize SMB on your system

SMB Header Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	clock
4	No Connection

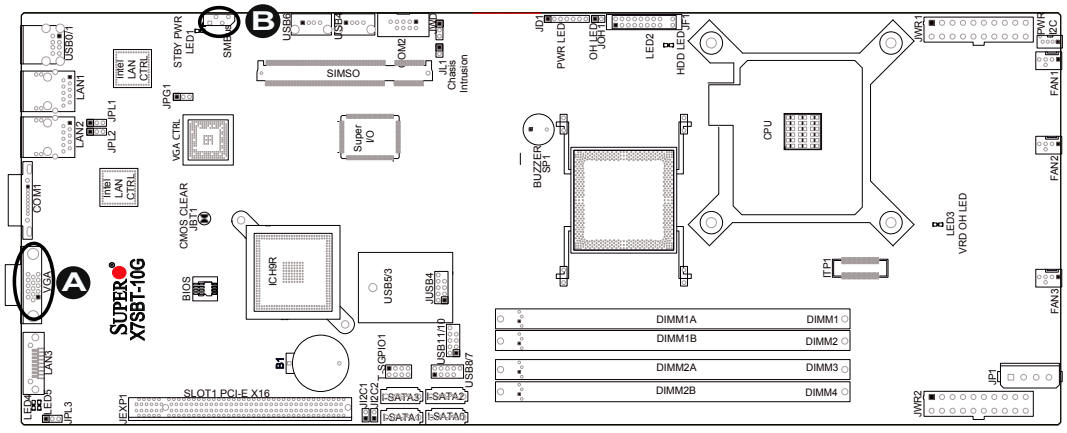
VGA Connector

A VGA connector (JVGA1) is located next to the COM1 port on the IO backplane. Refer to the board layout below for the location.



A. SMB

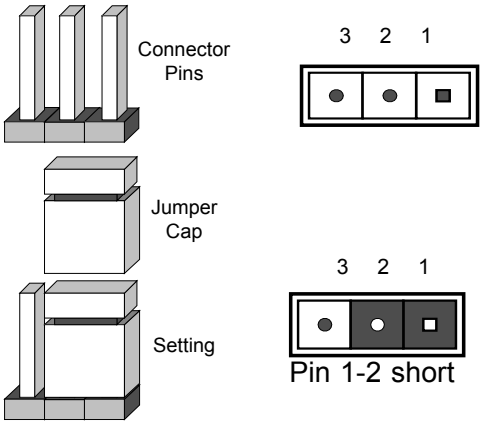
B. VGA



2-7 Jumper Settings

Explanation of Jumpers

To modify the operation of the motherboard, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. See the motherboard layout pages for jumper locations.



Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.

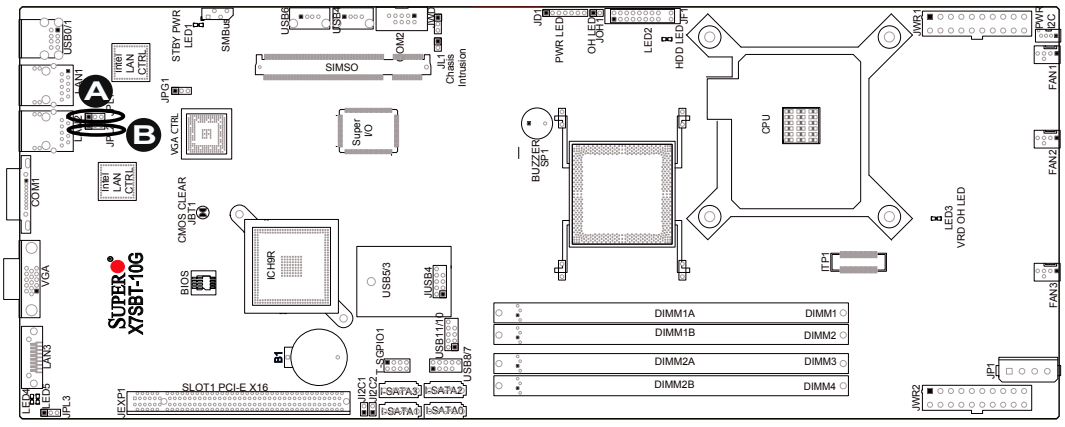
GLAN Enable/Disable

Jumpers JPL1 and JPL2 enable or disable GLAN Port1 and GLAN Port2 on the motherboard. See the table on the right for jumper settings. The default setting is **Enabled**.

GLAN Enable Jumper Settings	
Pin#	Definition
1-2	Enabled (default)
2-3	Disabled

A. GLAN 1 Enable

B. GLAN 2 Enable



10Gb_LAN Enable/Disable (For X7SBT-10G Only)

JPL3 enables or disables the 10 Gigabit_LAN Port (LAN3) on the motherboard. See the table on the right for jumper settings. The default setting is **Enabled**.

10Gb_LAN Enable Jumper Settings	
Pin#	Definition
1-2	Enabled (default)
2-3	Disabled

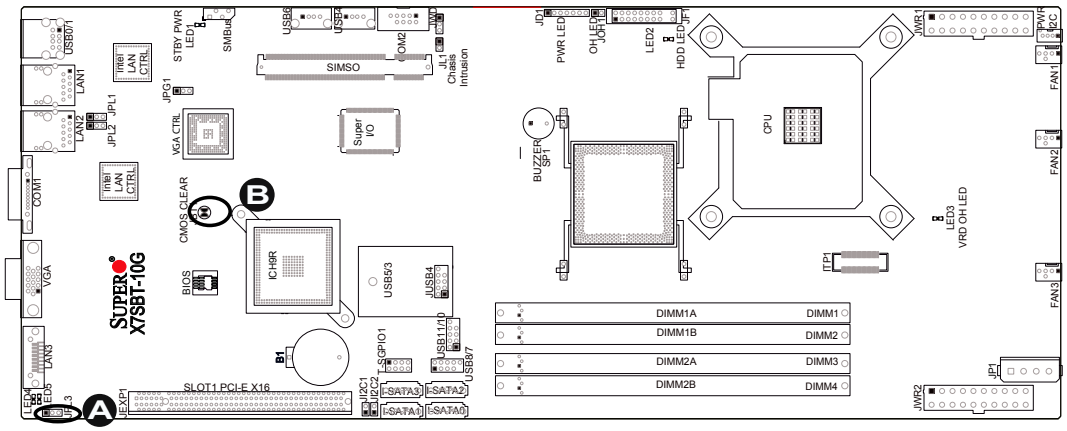
CMOS Clear

JBT1 is used to clear CMOS. Instead of pins, this "jumper" consists of contact pads to prevent the accidental clearing of CMOS. To clear CMOS, use a metal object such as a small screwdriver to touch both pads at the same time to short the connection. Always remove the AC power cord from the system before clearing CMOS.

Note: For an ATX power supply, you must completely shut down the system, remove the AC power cord and then short JBT1 to clear CMOS.

A. 10Gb_LAN Enable

B. CMOS Clear



Watch Dog Enable/Disable

Watch Dog is a system monitor that can reboot the system when a software application hangs. Close pins 1-2 of Jumper JWD to reset the system if an application hangs. Close pins 2-3 to generate a non-maskable interrupt signal for the application that hangs. See the table on the right for jumper settings. Watch Dog must also be enabled in the BIOS.

Watch Dog Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Reset (default)
Pins 2-3	NMI
Open	Disabled

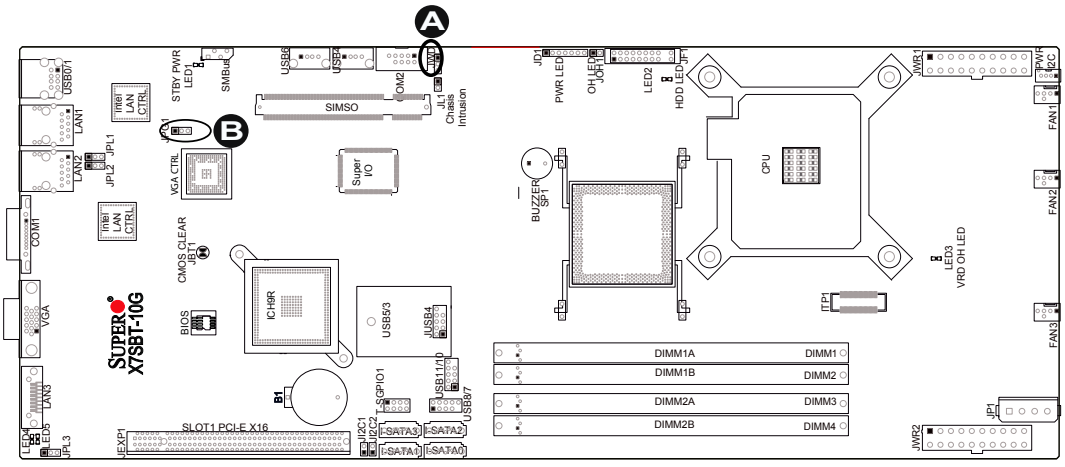
VGA Enable/Disable

JPG1 allows you to enable or disable the VGA port. The default position is on pins 1 and 2 to enable VGA. See the table on the right for jumper settings.

VGA Enable/Disable Jumper Settings (JPG1)	
Both Jumpers	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled

A. Watch Dog Enable

B. VGA Enable

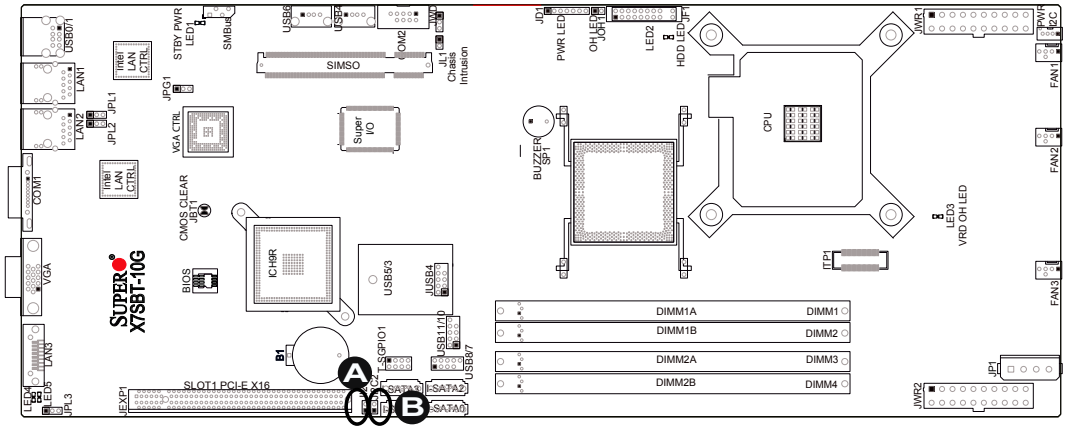


PCI/PCI-E Slots to SMB Speeds

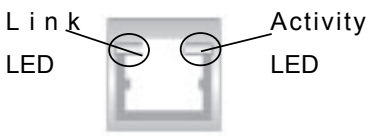
Jumpers JI^{2}C1/JI^{2}C2 allow you to connect PCI/PCI-Exp. Slots to the System Management Bus. The default setting is open to disable the connection.

SMBus to PCI-X/PCI-Exp Slots Jumper Settings	
Jumper Setting	Definition
Closed	Enabled
Open	Disabled (Default)

A. JI^{2}C1
B. JI^{2}C2



2-8 Onboard Indicators



Rear View
(when viewing from the back of the chassis.)

GLAN LEDs

There are two GLAN ports on the motherboard. Each Gigabit Ethernet LAN port has two LEDs. The yellow LED indicates activity, while the Link LED may be green, amber or off to indicate the speed of the connection. See the tables at right for more information.

GLAN Activity Indicator (Right) LED Setting		
Color	Status	Definition
Yellow	Flashing	LAN Active

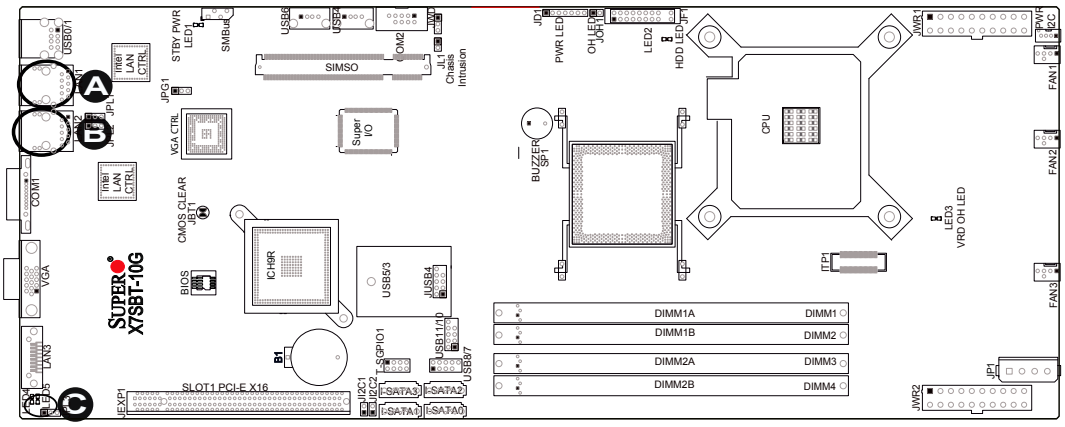
GLAN Link Indicator (Left) LED Settings	
LED Color	Definition
Off	No Connection or 10 Mbps
Green	100 Mbps
Amber	1 Gbps

10_Gigabit LAN LED (For the X7SBT-10G Only)

Two 10Gb LAN LED's are located at LED4 (Green) and LED5 (Yellow) on the motherboard. These LED indicators show the status of the onboard LAN ports. See the table on the right for more details.

10Gb LAN LED Indicator LED Settings		
LED Color	State	Definition
Green	Blinking	10Gb_LAN Active
Green	Static	10Gb_LAN Link
Yellow	Blinking	Gb_LAN Active
Yellow	Static	Gb_LAN Link

A.Gb LAN1 LEDs
B. Gb LAN2 LEDs
C. 10Gb LAN LED



Onboard Power LED

An Onboard Power LED is located at LED2 on the motherboard. When this LED Indicator is on, the system is on. Be sure to unplug the power cable before removing or adding any components. See the table on the right for more details.

Onboard PWR LED Indicator LED Settings	
LED Color	Definition
Off	System Off (*PWR cable not connected)
Green	System On
Green: Flashing	ACPI S1 State

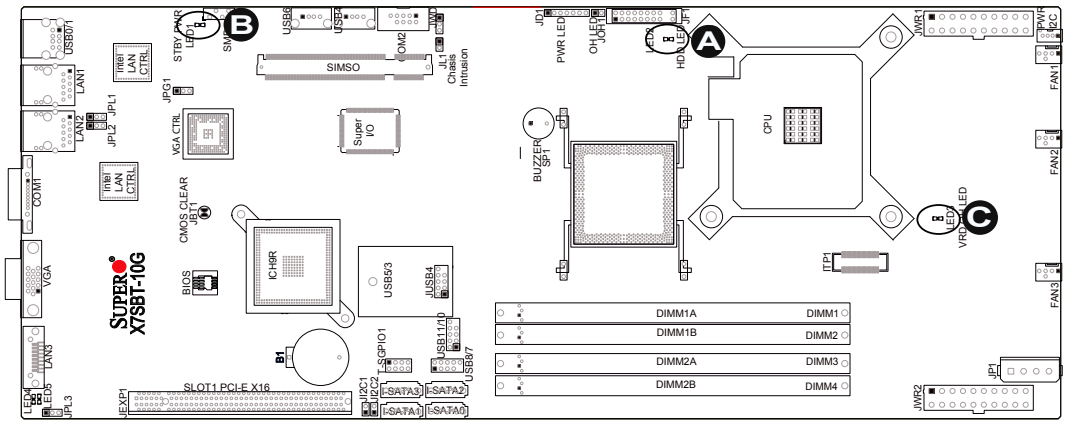
Standby Power LED and VRD Over Heat LED

There is a Standby power LED located at LED1 on the motherboard. There is also an OverHeat LED3 located at VRD OH LED on the motherboard.

A. Onboard PWR LED

B. Standby Power LED

C. VRD OH LED

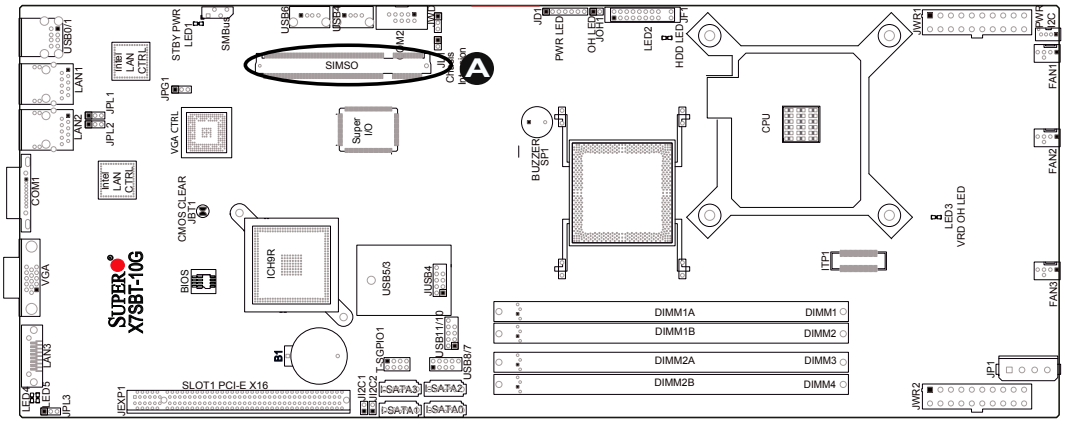


2-9 SIMSO IPMI Connection

SIMSO IPMI Slot

There is a SIMSO IPMI Slot on the motherboard. Refer to the layout below for the IPMI Slot location.

A. SIMSO IPMI slot



Chapter 3

Troubleshooting

3-1 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the 'Technical Support Procedures' and/or 'Returning Merchandise for Service' section(s) in this chapter. Always disconnect the AC power cord before adding, changing or installing any hardware components.

Before Power On

1. Make sure that there are no short circuits between the motherboard and chassis.
2. Disconnect all ribbon/wire cables from the motherboard, including those for the keyboard and mouse.
3. Remove all add-on cards.
4. Install a CPU and heatsink (making sure that it is fully seated) and then, connect the chassis speaker and the power LED to the motherboard. Check all jumper settings as well.
5. Make sure to use the correct type of CMOS battery as specified by the Manufacturer. Do not install the CMOS battery upside down to avoid possible explosion.

No Power

1. Make sure that there are no short circuits between the motherboard and the chassis.
2. Make sure that all jumpers are set to their default positions.
3. Check if the 115V/230V switch on the power supply is properly set.
4. Turn the power switch on and off to test the system.

5. The battery on your motherboard may be old. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.

No Video

1. If the power is on, but you have no video--in this case, you will need to remove all the add-on cards and cables first.
2. Use the speaker to determine if any beep codes exist. (Refer to Appendix A for details on beep codes.)
3. Remove all memory modules and turn on the system. (If the alarm is on, check the specifications of memory modules, reset the memory or try different modules.)
4. If the power is on but you have no video, remove all the add-on cards and cables.
5. Use the speaker to determine if any beep codes exist. Refer to Appendix A for details on beep codes.

Note: If you are a system integrator, VAR or OEM, a POST diagnostics card is recommended.

Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.
2. You should be using unbuffered DDR3 memory (see the next page). Also, it is recommended that you use the same memory speed for all DIMMs in the system. See Section 2-4 for memory limitations.
3. Check for bad DIMM modules or slots by swapping modules between slots and noting the results.
4. Check the power supply voltage 115V/230V switch.

Losing the System's Setup Configuration

1. Make sure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information. Refer to Section 1-6 for details on recommended power supplies.

2. The battery on your motherboard may be old. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.

3. If the above steps do not fix the Setup Configuration problem, contact your vendor for repairs.

3-2 Technical Support Procedures

Before contacting Technical Support, please take the following steps. Also, note that as a motherboard manufacturer, Super Micro does not sell directly to end-users, so it is best to first check with your distributor or reseller for troubleshooting services. They should know of any possible problem(s) with the specific system configuration that was sold to you.

1. Please go through the 'Troubleshooting Procedures' and 'Frequently Asked Question' (FAQ) sections in this chapter or see the FAQs on our web site (http://www.supermicro.com/support/faqs/) before contacting Technical Support.

2. BIOS upgrades can be downloaded from our web site at (http://www.supermicro.com/support/bios/).

Note: Not all BIOS can be flashed; it depends on the modifications to the boot block code.

3. If you still cannot resolve the problem, include the following information when contacting Super Micro for technical support:

- Motherboard model and PCB revision number
- BIOS release date/version (this can be seen on the initial display when your system first boots up).
- System configuration

  An example of a Technical Support form is on our web site at (http://www.supermicro.com/support/contact.cfm).

4. Distributors: For immediate assistance, please have your account number ready when placing a call to our technical support department. We can be reached by

e-mail at support@supermicro.com, by phone at:(408) 503-8000, option 2, or by fax at (408)503-8019.

3-3 Frequently Asked Questions

Question: What type of memory does my motherboard support?

Answer: Four DIMM slots support non-ECC Unbuffered Dual/Single Channel DDR3 1600 MHz up to 4GB in 2 DIMMs or DDR3 1333/1066/800 MHz up to 8GB in 4 DIMMs. Please note that X7SBT supports DDR3 up to 1600 MHz. You can only install up to two 1600 MHz modules with one module in DIMM1B slot or DIMM2B slot or with two modules in both DIMM 1B and DIMM2B slots

Question: How do I update my BIOS?

Answer: It is recommended that you **not** upgrade your BIOS if you are not experiencing problems with your system. Updated BIOS files are located on our web site at (http://www.supermicro com/support/bios/). Please check our BIOS warning message and the information on how to update your BIOS on our web site. Also, check the current BIOS revision and make sure it is newer than your current BIOS before downloading. Select your mainboard model and download the BIOS file to your computer. Unzip the BIOS update file and follow the readme.txt to flash the BIOS.

Question: What's on the CD that came with my motherboard?

Answer: The supplied compact disc has quite a few drivers and programs that will greatly enhance your system. We recommend that you review the CD and install the applications you need. Applications on the CD include chipset drivers for Windows and security and audio drivers.

Question: After I have installed 4 pieces of 1GB Memory, why does the BIOS only detect about 3.145GB of memory during POST?

Answer: Because the chipset does not support memory remapping, and PCI-E memory requires a great deal of memory, so there is a memory hole located around the 4GB memory address.

3-4 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Notes

Chapter 4

BIOS

4-1 Introduction

This chapter describes the Phoenix BIOS™ Setup utility for the X7SBT. The Phoenix ROM BIOS is stored in a flash chip and can be easily upgraded using a floppy disk-based program.

Note: Due to periodic changes to the BIOS, some settings may have been added or deleted and might not yet be recorded in this manual. Please refer to the Manual Download area of the Super Micro web site <http://www.supermicro.com> for any changes to the BIOS not reflected in this manual.

System BIOS

The BIOS is the Basic Input Output System used in all IBM® PC, XT™, AT®, and PS/2® compatible computers. The Phoenix BIOS stores the system parameters, types of disk drives, video displays, etc. in the CMOS. The CMOS memory requires very little electrical power. When the computer is turned off, a backup battery provides power to the CMOS logic, enabling it to retain system parameters. Each time the computer is powered on, the computer is configured with the values stored in the CMOS logic by the system BIOS, which gains control at boot-up.

How To Change the Configuration Data

The CMOS information that determines the system parameters may be changed by entering the BIOS Setup utility. This Setup utility can be accessed by pressing the <Delete> key at the appropriate time during system boot. (See below.)

Starting the Setup Utility

Normally, the only visible POST (Power On Self Test) routine is the memory test. As the memory is being tested, press the <Delete> key to enter the main menu of the BIOS Setup utility. From the main menu, you can access the other setup screens, such as the Security and Power menus. Beginning with Section 4-3, detailed descriptions are given for each parameter setting in the Setup utility.

Warning: Do not shut down or reset the system while updating the BIOS to prevent possible boot failure.

4-2 Running Setup

Default settings are in bold text unless otherwise noted.

The BIOS setup options described in this section are selected by choosing the appropriate text from the main BIOS Setup screen. All displayed text is described in this section, although the screen display is often all you need to understand how to set the options (see the next page).

When you first power on the computer, the Phoenix BIOS™ is immediately activated.

While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Delete> immediately after turning the system on, or

2. When the message shown below appears briefly at the bottom of the screen during the POST (Power On Self-Test), press the <Delete> key to activate the main Setup menu.

Press the <Delete> key to enter Setup

4-3 Main BIOS Setup

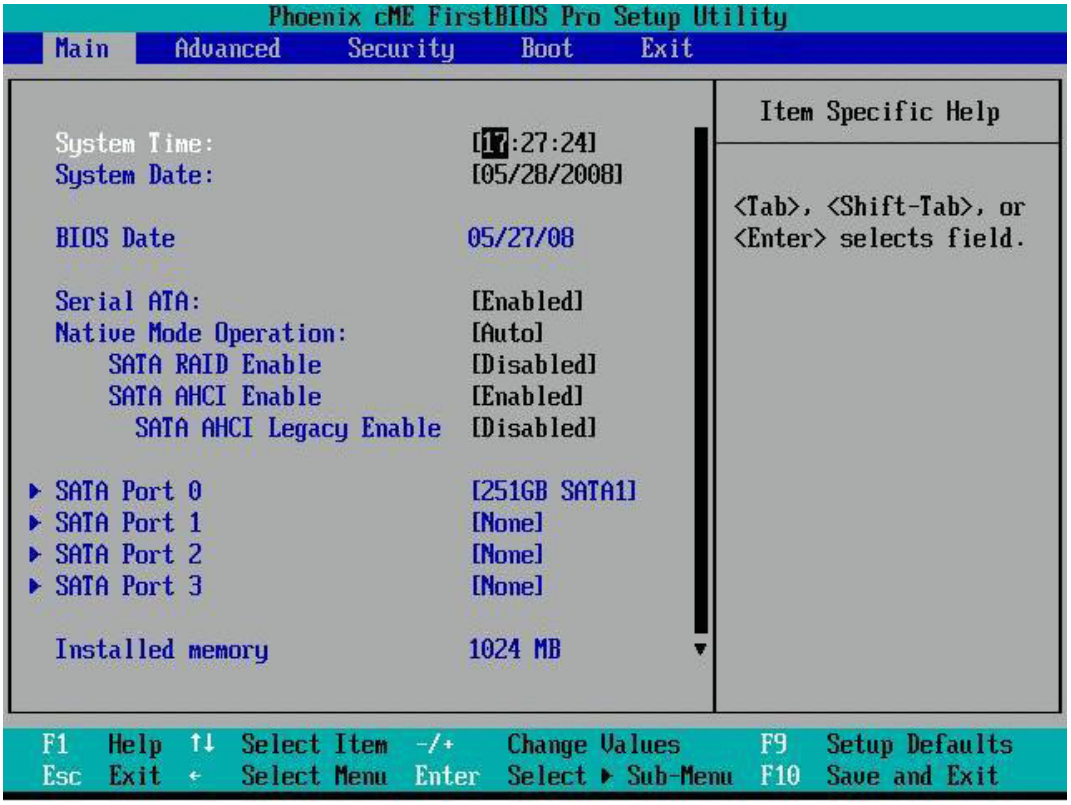
All main Setup options are described in this section. The main BIOS Setup screen is displayed below.

Use the Up/Down arrow keys to move among the different settings in each menu. Use the Left/Right arrow keys to change the options for each setting.

Press the <Esc> key to exit the CMOS Setup Menu. The next section describes in detail how to navigate through the menus.

Items that use submenus are indicated with the ▶icon. With the item highlighted, press the <Enter> key to access the submenu.

Main BIOS Setup Menu



Main Setup Features

System Time

To set the system date and time, key in the correct information in the appropriate fields. Then press the <Enter> key to save the data.

System Date

Using the arrow keys, highlight the month, day and year fields, and enter the correct data. Press the <Enter> key to save the data.

BIOS Date

The item displays the date that the BIOS was built.

BIOS Revision

The item displays the BIOS revision number.

Serial ATA

This setting allows you to enable or disable the function of the Serial ATA. The options are Disabled and **Enabled.**

Native Mode Operation

Select the native mode of operation for the installed ATA device(s). The options are: **Auto,** and Serial.

Note: Auto may cause Linux to recognize SATA hard drives as IDE drives

SATA RAID Enable

This setting allows you to enable or disable the SATA RAID functionality. The options are **Disabled** and Enabled.

ICH RAID CobeBase

Select Intel to enable the Intel SATA RAID firmware. Select Adaptec to use the Adaptec HostRAID firmware. The options are **Intel** and Adaptec**..**

SATA AHCI Enable

Enhanced AHCI: WinXP-SP1 + IAA driver supports AHCI mode. The options are **Disabled** and Enabled.

SATA AHCI Legacy Enable (This item appears it SATA AHCI Enable is activated)

This setting disables SATA Ports 5 and 6 when in AHCI legacy mode. The options are **Disabled** and Enabled.

▶ SATA Port 0, SATA Port 1, SATA Port 2, SATA Port 3

Extended Primary Master/Slave

These settings allow the user to set the parameters of IDE Primary Master/Slave, IDE Secondary Master/Slave, SATA Port3/SATA Port4 and Extended Primary Master/Slave slots. Hit <Enter> to activate the following sub-menu screen for detailed options of these items. Set the correct configurations accordingly. The items included in the sub-menu are:

Type

This option allows the user to select the type of IDE hard drive. Select **Auto** to allow the BIOS to automatically configure the parameters of the HDD installed on a slot. Enter a number between 1 to 39 to select a predetermined HDD type. Select User to allow the user to enter the parameters of the HDD installed. Select CDROM if a CDROM drive is installed. Select ATAPI if a removable disk drive is installed.

Multi-Sector Transfers

This item allows the user to specify the number of sectors per block to be used in multi-sector transfer.

LBA Mode Control

This item determines whether the Phoenix BIOS will access the IDE Primary Master Device via the LBA mode.

32 Bit I/O

This option allows the user to enable or disable the function of 32-bit data transfer. The options are Enabled and **Disabled**.

Transfer Mode

This option allows the user to set the transfer mode.

Ultra DMA Mode

This option allows the user to configure the Ultra DMA Mode setting.

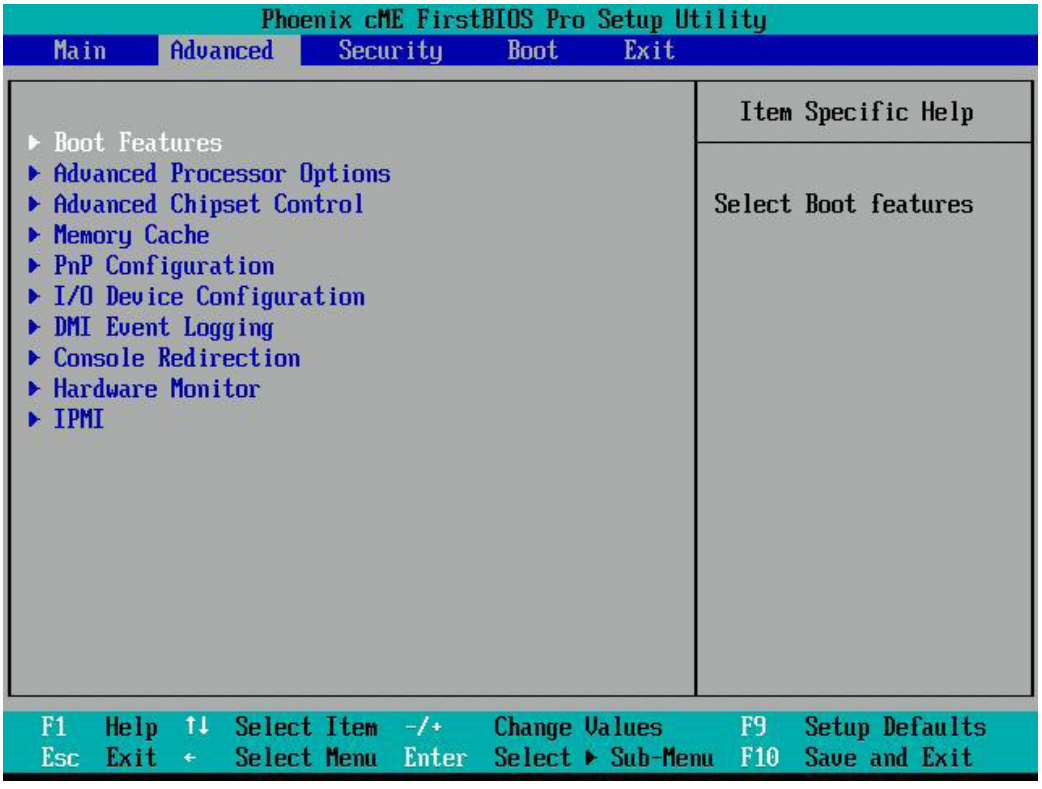
Installed Memory

This display informs you how much total memory installed in the system is detected by the BIOS.

System Memory

This display informs you how much of the installed memory is available to the system.

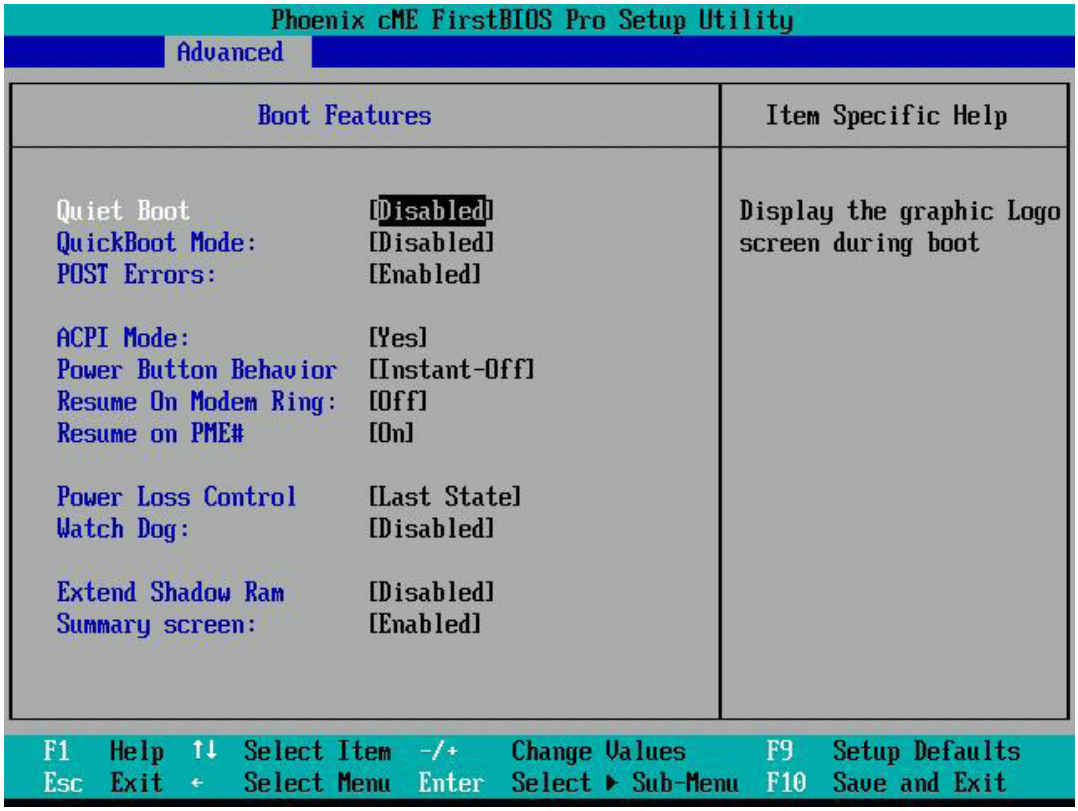
4-4 Advanced Setup



Choose Advanced from the Phoenix BIOS Setup Utility main menu with the arrow keys. You should see the above display. The items with a triangle beside them have sub- menus that can be accessed by highlighting the item and pressing <Enter>.

▶Boot Features

Access the submenu to make changes to the following settings:


Phoenix cME FirstBIOS Pro Setup Utility
Advanced
Boot Features
Item Specific Help
Quiet Boot [Disabled]
QuickBoot Mode: [Disabled]
POST Errors: [Enabled]
ACPI Mode: [Yes]
Power Button Behavior [Instant-Off]
Resume On Modem Ring: [Off]
Resume on PME# [On]
Power Loss Control [Last State]
Watch Dog: [Disabled]
Extend Shadow Ram [Disabled]
Summary screen: [Enabled]
Display the graphic Logo screen during boot
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Quiet Boot

This setting allows you to **Enabled** or Disabled the graphic logo screen display during bootup.

QuickBoot Mode

If enabled, this feature will speed up the POST (Power On Self Test) routine by skipping certain tests after the computer is turned on. The settings are **Enabled** and Disabled**.** If Disabled, the POST routine will run at normal speed.

POST Error

Use the setting to Pause and Display SETUP entry or resume boot prompt if error occurs on boot disabled. The options are **Enabled** and Disabled.

ACPI Mode

Use the setting to determine whether you want to use the ACPI (Advanced Configuration and Power Interface) power management on your system. The options are **Yes** and No.

Power Button Behavior

If set to **Instant-Off**, the system will power on or power off immediately as soon as you hit the power button. The options are default and 4-second Override.

Resume On Modem Ring

Select On to "wake your system up" when an incoming call is received by your modem. The options are On and **Off.**

Resume On PME#

Select On to "wake your system up" from the PME#. The options are **On** and Off.

Power Loss Control

This setting allows you to choose how the system will react when power returns after an unexpected loss of power. The options are Stay Off, Power On, and **Last State.**

Watch Dog

Select Enabled to automatically reset the system if the system is not active for more than 5 minutes. The options are Enabled and **Disabled**.

Extend Shadow RAM

The feature allocates more Shadow RAM for devices that may need more than the system's default. The options are Disabled and **Enabled.**

Summary Screen

This setting allows you to **Enabled** or Disabled the summary screen which displays the system configuration during bootup.

▶Advanced Processor Options

Access the submenu to make changes to the following settings.

CPU Speed

This is a display that indicates the speed of the installed processor.

Frequency Ratio (Available when supported by the CPU)

The feature allows you to set the internal frequency multiplier for the CPU. The feature depends on the CPU flexibility. The options are: **Default**, x6, x7, x8, x9, x10 and x11.

Frequency High Ratio (Available when supported by the CPU)

The feature allows you to set the high ratio internal frequency multiplier for the Intel SpeedStep CPUs. The options are **Default**, [X6] to [X11] and [X12] to [X27]. (Note: If a wrong ratio that is not supported by the CPU is selected, the system may hang. If this happens, clear the CMOS to recover the system.)

Machine Checking (Available when supported by the CPU)

Set to Enabled to activate the function of Machine Checking and allow the CPU to detect and report hardware (machine) errors via a set of model-specific registers (MSRs). The options are Disabled and **Enabled.**

Compatible FPU Code (Available when supported by the CPU)

Set to Enabled to keep the content of the last instruction Operating Code (OPCode) in the floating point (FP) state. The options are **Disabled** and Enabled.

Adjacent Cache Line Prefetch (Available when supported by the CPU)

The CPU fetches the cache line for 64 bytes if this option is set to Disabled. The CPU fetches both cache lines for 128 bytes as comprised if Enabled. The options are Disabled and **Enabled**.

Set Maximum Ext. CPUID=3

When set to Enabled, the Maximum Extended CPUID will be set to 3. The options are **Disabled** and Enabled.

Echo TPR

Set to Enabled to prevent xTPR messages from being sent to the system. The options are Disabled and **Enabled**.

C1 Enhanced Mode (Available when supported by the CPU)

Set to Enabled to enable the Enhanced Halt State to lower CPU voltage/frequency to prevent overheat. The options are Enabled and **Disabled**.

Please refer to Intel's web site (www.intel.com) for detailed information.

No Execute Mode Memory Protection (Available when supported by the CPU and the OS)

Set to Enabled to enable Execute Disable Bit and allow the processor to classify areas in memory where an application code can execute and where it cannot, and thus preventing a worm or a virus from inserting and creating a flood of codes to overwhelm the processor or damage the system during an attack.

This feature is available when your OS and your CPU support the function of Execute Disable Bit.) The options are Disabled and **Enabled**. (Note: For more information regarding the hardware/software support for this function, please refer to Intel's and Microsoft's web sites.

Enhanced Intel® SpeedStep® Support (Available when supported by the CPU)

Select Enabled to use the Enhanced Intel SpeedStep Technology and allows the system to automatically adjust the processor voltage and core frequency in an effort to reduce power consumption and heat dissipation. The options are Enabled (-C States, GV1/GV3 are enabled), **GV1/GV3 Only** (C States: Disabled), C-States Only (-G1/G3: Disabled), and Disabled (-C States, GV1/GV3 are disabled). Please refer to Intel's web site (www.intel.com) for detailed information.

Hyperthreading (Available when supported by the CPU)

Set to Enabled to use the Hyperthreading Technology, which will result in increased CPU performance. The options are Disabled and **Enabled**.

Core-Multi-Processing (Available when supported by the CPU)

Set to Enabled to use a processor's Second Core and beyond. (Please refer to Intel's web site for more information.) The options are Disabled and **Enabled**.

Intel® Enhanced Debug (Recommended for maintenance)

This feature allows an operating system level debug of issues that may be processor related. The options are **Enabled** and Disabled.

Thermal Management 2 (Available when supported by the CPU)

Set to **Enabled** to use Thermal Management 2 (TM2,) which will lower the CPU voltage and frequency when the CPU temperature reaches a predefined overheat threshold. Set to Disabled to use Thermal Manager 1 (TM1), allowing CPU clocking to be regulated via the CPU Internal Clock modulation when the CPU temperature reaches the overheat threshold.

Intel® Virtualization Technology (Available when supported by the CPU)

Select Enabled to use the feature of Virtualization Technology to allow one platform to run multiple operating systems and applications in independent partitions, creating multiple virtual systems in one computer. The options are Enabled and **Disabled**. If there is any change to this setting, you will need to power off and restart the system for the change to take effect.) Please refer to Intel's web site (www.intel.com) for detailed information.

▶Advanced Chipset Control

Access the submenu to make changes to the following settings.

Warning: Take caution when changing the Advanced settings. An Incorrect value, a very high DRAM frequency or an incorrect DRAM timing may cause system to become unstable. When this occurs, reset the setting to the default setting.

Clock Spectrum Feature

If Enabled, BIOS will monitor the level of Electromagnetic Interference caused by the components and will attempt to decrease the interference whenever needed. The options are Enabled and **Disabled**.

Memory Remapping

This feature allows the bios reserve memories to remap the memory above the 4GB to 5GB area when using 4GB of memory. The settings are **Enabled** and Disabled.

High Precision Event Timer

Select Yes to activate this feature which is capable of producing periodic interrupts at a much higher frequency than a Real-time Clock (RTC) can in synchronizing multimedia streams, providing smooth playback and reducing the dependency on other timestamp calculation devices, such as an X86 RDTSC Instruction embedded in a CPU. THe High Precision Event Timer is used to replace the 8254 Prorammable Interval Timer. The options are Yes and **No.**

Legacy USB Support

This feature enables support for legacy universal serial bus. The options are **Enabled** and Disabled.

EHCI Controller

This feature enables the onboard Enhanced Host Controller Interface. The options are **Enabled** and Disabled.

USB Host Controller

This feature enables or disables the USB Controller in Dev 29 Function 0,1,2,3,7. The options are **Enabled** and Disabled.

▶Memory Cache

Cache System BIOS Area

This setting allows you to designate a reserve area in the system memory to be used as a System BIOS buffer and allow BIOS to write (cache) data into this reserved memory area. Select **Write Protect** to enable this function, and this area will be reserved for BIOS ROM access only. Select Uncached to disable this function and make this area available for other devices.

Cache Video BIOS Area

This setting allows you to designate a reserve area in the system memory to be used as a Video BIOS buffer and allow BIOS to write (cache) data into this reserved memory area. Select **Write Protect** to enable the function and this area will be reserved for Video BIOS ROM access only. Select Uncached to disable this function and make this area available for other devices.

Cache Base 0-512K

If enabled, this feature will allow the data stored in the base memory area: block 0-512K to be cached (written) into a buffer, a storage area in the Static DROM (SDROM) or to be written into L1, L2 cache inside the CPU to speed up CPU operations. Select Uncached to disable this function. Select Write Through to allow data to be cached into the buffer and written into the system memory at the same time. Select Write Protect to prevent data from being written into the base memory area of Block 0-512K. Select Write Back to allow the CPU to write data back directly from the buffer without writing data to the System Memory for fast CPU data processing and operation. The options are Uncached, Write Through, Write Protect, and **Write Back**.

Cache Base 512K-640K

If enabled, this feature will allow the data stored in the memory area: 512K-640K to be cached (written) into a buffer, a storage area in the Static DROM (SDROM) or written into L1, L2, L3 cache inside the CPU to speed up CPU operations. Select Uncached to disable this function. Select Write Through to allow data to be cached into the buffer and written into the system memory at the same time. Select Write Protect to prevent data from being written into the base memory area of Block

512K-640K. Select Write Back to allow the CPU to write data back directly from the buffer without writing data to the System Memory for fast CPU data processing and operation. The options are Unchached, Write Through, Write Protect, and **Write Back.**

Cache Extended Memory

If enabled, this feature will allow the data stored in the extended memory area to be cached (written) into a buffer, a storage area in the Static DROM (SDROM) or written into L1, L2, L3 cache inside the CPU to speed up CPU operations. Select Uncached to disable this function. Select Write Through to allow data to be cached into the buffer and written into the system memory at the same time. Select Write Protect to prevent data from being written into the extended memory area above 1 MB. Select Write Back to allow the CPU to write data back directly from the buffer without writing data to the System Memory for fast CPU data processing and operation. The options are Uncached, Write Through, Write Protect, and **Write Back**.

▶PNP Configuration

Access the submenu to make changes to the following settings for PNP (Play & Plug) devices.

Onboard LAN 1 and Onboard LAN 2

Option ROM Scan

When enabled, this setting will initialize the device expansion ROM. The options are **Enabled** and Disabled.

Latency Timer

This setting allows you to set the clock rate for Bus Master. A high-priority, high-throughout device may benefit from a greater clock rate. The options are **Default**, 0020h, 0040h, 0060h, 0080h, 00A0h, 00C0h, and 00E0h. For Unix, Novelle and other Operating Systems, please select the option: other. If a drive fails after the installation of a new software, you might want to change this setting and try again. A different OS requires a different Bus Master clock rate.

▶PCI-Express Slot 1

Access the submenu for each of the settings above to make changes to the following:

Option ROM Scan

When enabled, this setting will initialize the device expansion ROM. The options are **Enabled** and Disabled.

Enable Master

This setting allows you to enable the selected device as the PCI bus master. The options are **Enabled** and Disabled.

Latency Timer

This setting allows you to set the clock rate for Bus Master. A high-priority, high-throughout device may benefit from a greater clock rate. The options are **Default**, 0020h, 0040h, 0060h, 0080h, 00A0h, 00C0h, and 00E0h. For Unix, Novelle and other Operating Systems, please select the option: other. If a drive fails after the installation of a new software, you might want to change this setting and try again. A different OS requires a different Bus Master clock rate.

▶I/O Device Configuration

Access the submenu to make changes to the following settings.

KBC Clock Input

This setting allows you to select the clock frequency for the Keyboard Controller. The options are 6MHz, 8MHz, **12MHz**, and 16MHz.

Serial Port A

This setting allows you to decide how the system controls Serial Port A. The options are **Enabled** (user defined), Disabled.

Base I/O Address

This setting allows you to select the base I/O address for Serial Port A. The options are **3F8**, 2F8, 3E8, and 2E8.

Interrupt

This setting allows you to select the IRQ (interrupt request) for Serial Port A. The options are IRQ3 and **IRQ4**.

Serial Port B

This setting allows you to decide how the system controls Serial Port B. The options are **Enabled** (user defined), Disabled.

Mode

This setting allows you to set the type of device that will be connected to Serial Port B. The options are **Normal** and IR (for an infrared device) and ASK-IR.

Base I/O Address

This setting allows you to select the base I/O address for Serial Port B. The options are 3F8, **2F8**, 3E8 and 2E8.

Interrupt

This setting allows you to select the IRQ (interrupt request) for Serial Port B. The options are **IRQ3** and IRQ4.

▶DMI Event Logging

Event Log Validity

This setting allows you to report the validity of the DMI event log.

Event Log Capacity

This setting allows you to report the space available in the DMI event log. Full indicates the DMI log has no more space available to store DMI events.

View DMI Event Log

This setting allows the user to view the events in the DMI log.

Event Logging

Select **Enable** to log DMI events.

Mark DMI Events as Read

This setting allows you to mark DMI events as read.

Clear all DMI Event Logs

Setting this option to Yes will clear the DMI event log after rebooting. The options are Yes and **No.**

▶Console Redirection

Access the submenu to make changes to the following settings:

COM Port Address

This setting will allow you to specify which COM port to direct the remote console to: Onboard COM A or Onboard COM B. The options are Onboard COM A, Onboard COM B and **Disabled**.

Baud Rate

This setting will enable you to set the BAUD rate for the console redirection. The options are 300,1200, 2400, 9600, **19.2 K**, 38.4K, 57.6K, and 115.2K.

Console Type

This setting will enable you to set the console redirection type. The options are VT100, VT100 (8bit), PC ANSI (7bit), **PC ANSI**, VT100+, VT-UTF8 and ASCII.

Flow Control

This setting enables you to select the flow control option for the console. The options are: None, XON/XOFF, and **CTS/RTS.**

Console Connection

This setting allows you to decide how the console redirection is to be connected. The options are **Direct** or Via Modem.

Continue CR after Post

This setting allows you to decide if you would like to continue with the console redirection after the POST routine. The options are On and **Off**.

▶Hardware Monitoring

Highlight this and hit <Enter> to see the status of each of the following items:

CPU Overheat Alarm

This option allows the user to select the CPU Overheat Alarm setting which determines when the CPU OH alarm will be activated to provide warning of possible CPU overheat. Refer to the the next item, CPU Temperature for more information regarding PECI, DTS and other thermal features of this motherboard.

Warning: Any temperature that exceeds the CPU threshold temperature predefined by the CPU manufacturer may result in CPU overheat or system instability. When the CPU temperature reaches this predefined threshold, the CPU and system cooling fans will run at full speed.

The options are:

The Default Alarm Setting: Select this setting if you want the CPU overheat alarm (including the LED and the buzzer) to be triggered when the CPU temperature reaches about +5 PECI counts above the threshold temperature as predefined by the CPU manufacturer to give the CPU and system fans additional time needed for CPU and system cooling.

The Early Alarm Setting: Select this setting if you want the CPU overheat alarm (including the LED and the buzzer) to be triggered as soon as the CPU temperature reaches the CPU overheat threshold as predefined by the CPU manufacturer.

CPU Temperature

This item displays the level of CPU temperature (High, Medium, Low) as detected by the BIOS. The information shown in the screen is for your reference only. (See the notes below for more information on DTS and PECI)

Low – This level is considered as the 'normal' operating temperature. No action is required. The PECI count is below or equal to the processor's DTS thermal throttle point, minus 10 PECI counts.

Medium – The processor is running warmer. This is a 'caution' level and generally means that there may be factors contributing to this condition. At this point, the PECI count is above the processor's DTS thermal throttle point minus 10 PECI counts, but still below or equal to the DTS thermal throttle point.

High – The processor is running hot. Take the necessary steps to correct any heat dissipation problems. Please check the system fans, chassis ventilation and room temperature to correct any problems. At this point, the system fans will run at full speed. The system's Overheat Alarm will be triggered if the DTS thermal throttle point is reached, plus 5 PECI counts. (This is the 'Default Alarm Setting'. Refer to the previous item, 'CPU Overheat Alarm' to set this alarm to trigger earlier at 0 PECI count.) The system may also shut down to prevent damage to the processor if it is not corrected. At this level, the PECI count is 0 or above the processor's DTS thermal throttle point.

Notes:

Supermicro does not display CPU absolute temperatures because Intel has changed the processor methodology to PECI (Platform Environment Control Interface) using DTS (Digital Thermal Sensors). Intel processors only provide PECI counts as references for fan speed controls. So all our Intel processor-based motherboards will be/have been updated to change the CPU temperature display from numbers (absolute temperatures) to text (low, medium, and high).

Each processor has a DTS and every processor's DTS is individually calibrated at the factory. DTS' function is to provide digital data that informs the system of the processor's thermal throttle point. Since this value varies for every processor, it is impossible to assign a particular temperature level at the BIOS level. Instead, Intel developed PECI. PECI reports a negative value expressing the information imbedded in DTS and subtracting from it the current temperature reading. For example, if the assigned DTS thermal throttle point value in a processor is 85 °C and the current temperature reading is 35 °C, the value reported by PECI would be -50 °C. This PECI 'count' is monitored by your Supermicro motherboard and has been configured to display information according to a particular PECI 'count'. These are displayed in the BIOS as Low, Medium and High. A reading of "High" means that the

PECI count has exceeded the DTS thermal throttle point (PECI count of zero and above).

The information provided above is for your reference only. For more information on thermal management, please refer to Intel's Web site at www.Intel.com.

System Temperature

This item displays the absolute system temperature as detected by the BIOS.

CPU Fan/Fan1 to Fan 3

If the feature of Auto Fan Control is enabled, the BIOS will automatically display the status of the fan as specified.

Fan Speed Control Modes

This feature allows you to decide how the system controls the speeds of the onboard fans. The CPU temperature and the fan speed are correlative. When the CPU on-die temperature increases, the fan speed will also increase, and vice versa. If the option is set to 3-pin fan, the fan speed is controlled by voltage. If the option is set to “4-pin”, the fan speed will be controlled by Pulse Width Modulation (PWM). Select 3- pin if your chasis came with 3-pin fan headers. Select “Workstation” if your system is used as a Workstation. Select “Disable” to disable the fan speed control function to allow the onboard fans to constantly run at full speed (12V). The options are **Disabled (Full Speed)**, 3-pin (Server), 3-pin (Workstation), 4-pin (Server), and 4-pin (Workstation).

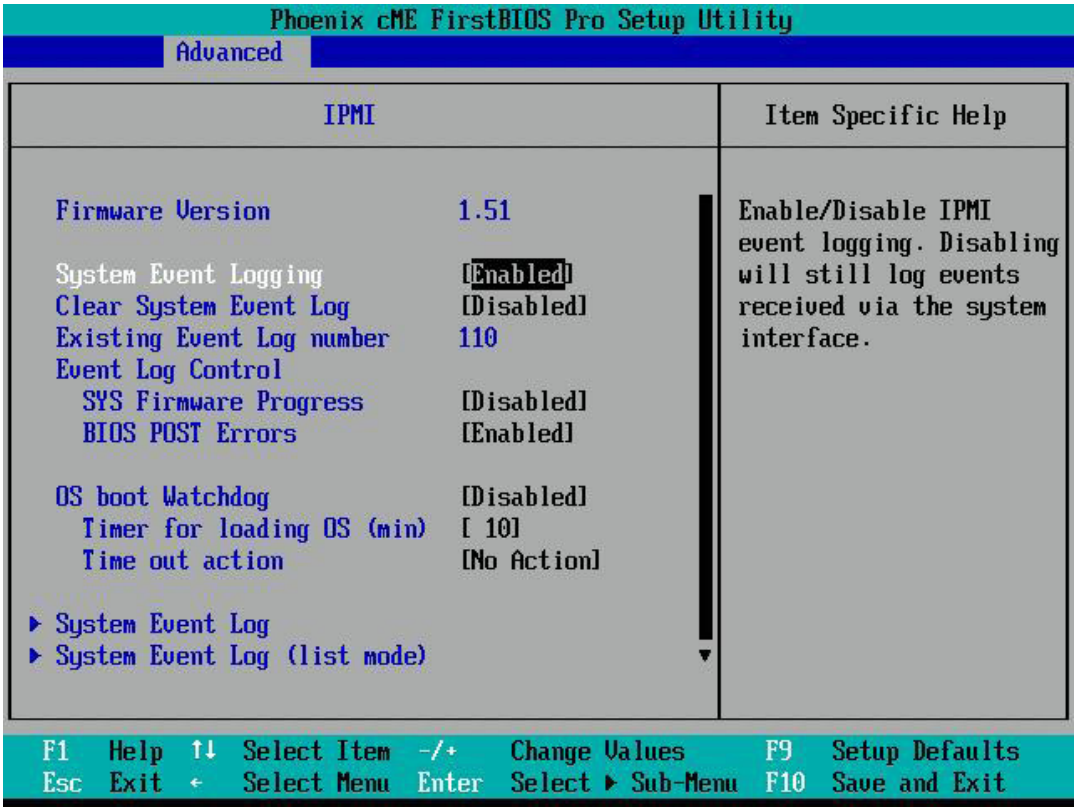
Voltage Monitoring

The following items will be monitored and displayed:

Vcore A, 12V, Vdimm, 5V, 3.3V, 1.25V, 3.3Vsb, Vbat

Note: In the Windows OS environment, the Supero Doctor III settings take precedence over the BIOS settings. When first installed, Supero Doctor III adopts the temperature threshold settings previously set in the BIOS. Any subsequent changes to these thresholds must be made within Supero Doctor, since the SD III settings override the BIOS settings. For the Windows OS to adopt the BIOS temperature threshold settings, please change the SDIII settings to be the same as those set in the BIOS.

▶IPMI (The option is available only when an IPMI card is installed in the system.)


Phoenix cME FirstBIOS Pro Setup Utility
Advanced
IPMI
Item Specific Help
Firmware Version 1.51
System Event Logging [Enabled]
Clear System Event Log [Disabled]
Existing Event Log number 110
Event Log Control
SYS Firmware Progress [Disabled]
BIOS POST Errors [Enabled]
OS boot Watchdog [Disabled]
Timer for loading OS (min) [10]
Time out action [No Action]
System Event Log
System Event Log (list mode)
Enable/Disable IPMI event logging. Disabling will still log events received via the system interface.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Firmware Version: This item displays the current Firmware Version.

System Event Logging

Select Enabled to enable IPMI Event Logging. When this function is set to Disabled, the system will continue to log events received via system interface. The options are **Enabled** and Disabled.

Clear System Event Logging

Enabling this function to force the BIOS to clear the system event logs during the next cold boot. The options are Enabled and **Disabled**.

Existing Event Log Number

This item displays the number of the existing event log.

Event Log Control

System Firmware Progress

Enabling this function to log POST progress. The options are Enabled and **Disabled**.

BIOS POST Errors

Enabling this function to log POST errors. The options are **Enabled** and Disabled.

OS Boot Watch Dog

Set to Enabled to enable OS Boot Watch Dog. The options are Enabled and **Disabled**.

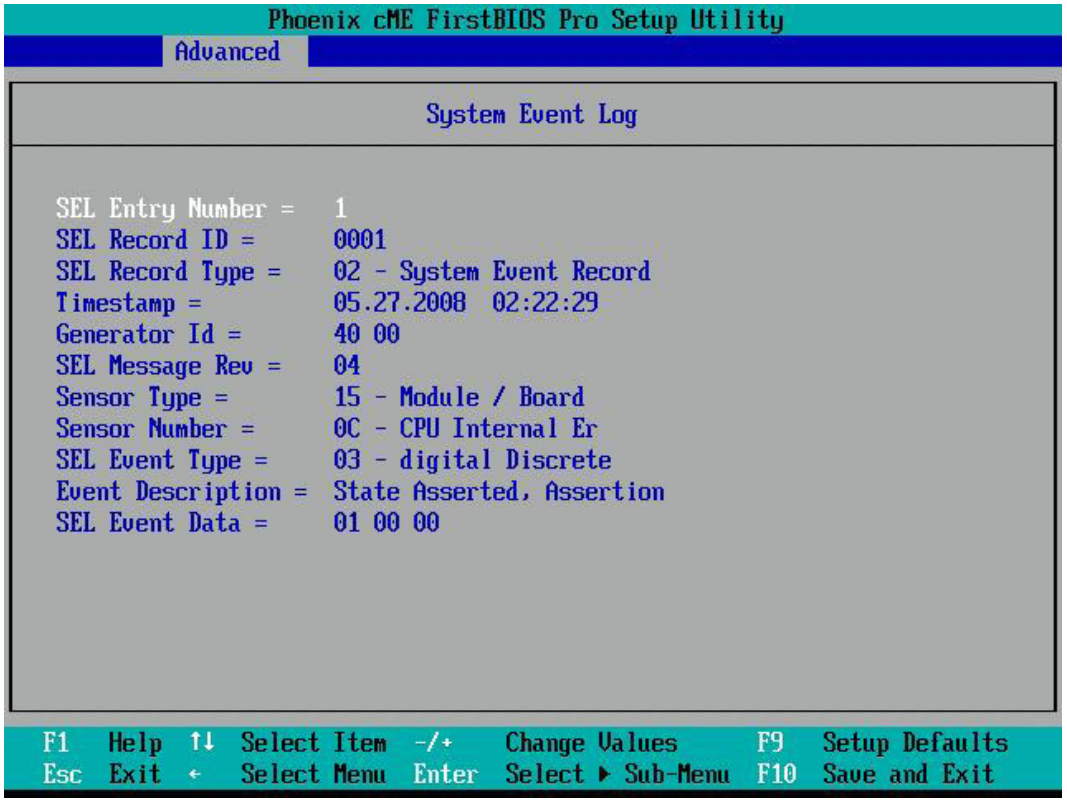
Timer for Loading OS (Minutes)

This feature allows the user to set the time value (in minutes) for the previous item: OS Boot Watch Dog by keying-in a desired number in the blank. The default setting is 10 (minutes.) (Please ignore this option when OS Boot Watch Dog is set to "Disabled".)

Time Out Option

This item allows the user to decide what action to take in an event of a system boot failure. The options are **No Action**, Reset, Power Off and Power Cycles

▶System Event Log/System Event Log (List Mode)

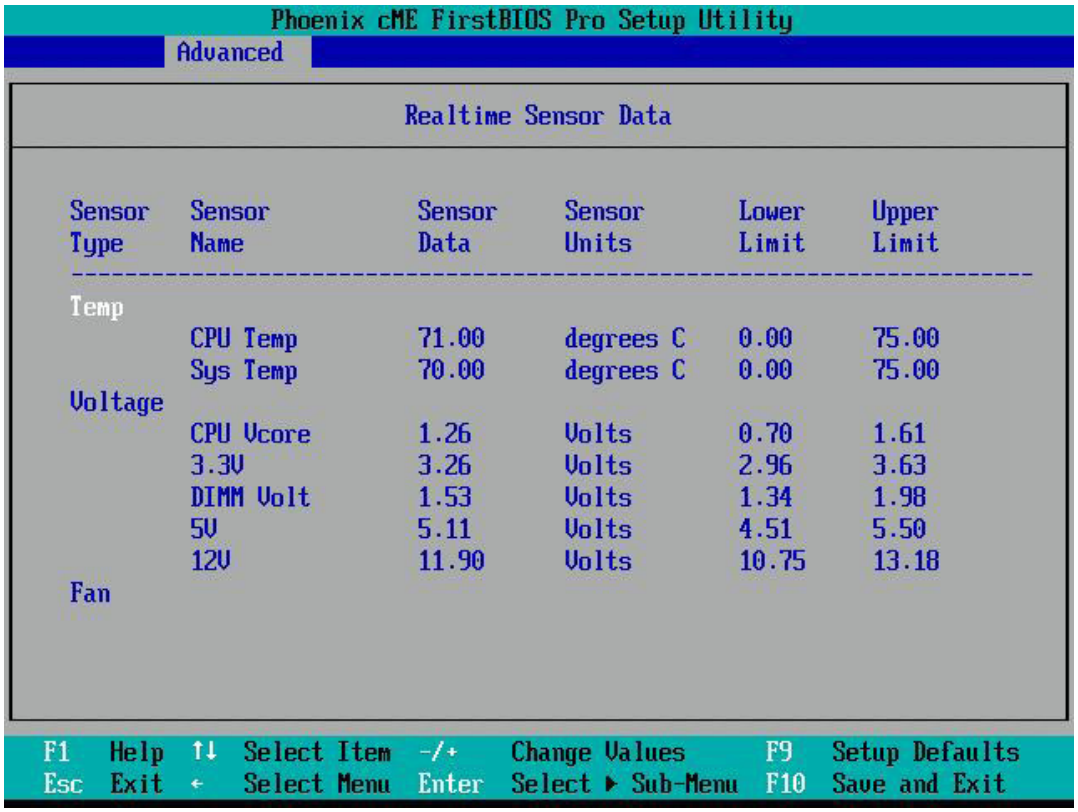

Phoenix cME FirstBIOS Pro Setup Utility
Advanced
System Event Log
SEL Entry Number = 1
SEL Record ID = 0001
SEL Record Type = 02 - System Event Record
Timestamp = 05.27.2008 02:22:29
Generator Id = 40 00
SEL Message Rev = 04
Sensor Type = 15 - Module / Board
Sensor Number = 0C - CPU Internal Er
SEL Event Type = 03 - digital Discrete
Event Description = State Asserted, Assertion
SEL Event Data = 01 00 00
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

These options display the System Event (SEL) Log and System Event (SEL) Log in List Mode. Items include: SEL (System Event Log) Entry Number, SEL Record

ID, SEL Record Type, Time Stamp, Generator ID, SEL Message Revision, Sensor Type, Sensor Number, SEL Event Type, Event Description, and SEL Event Data.

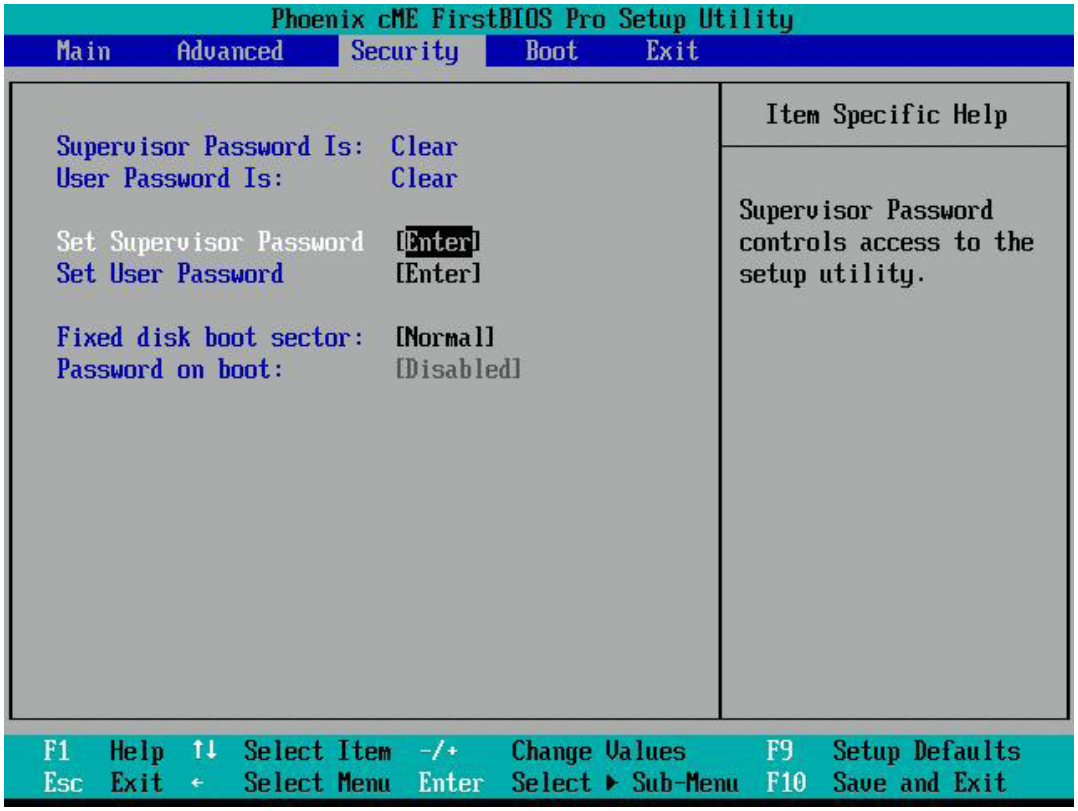
▶Realtime Sensor Data

This feature display information from motherboard sensors, such as temperatures, fan speeds and voltages of various components.


Phoenix cME FirstBIOS Pro Setup Utility
Advanced
Realtime Sensor Data
Sensor Type
Sensor Name
Sensor Data
Sensor Units
Lower Limit
Upper Limit
Temp
CPU Temp 71.00 degrees C 0.00 75.00
Sys Temp 70.00 degrees C 0.00 75.00
Voltage
CPU Vcore 1.26 Volts 0.70 1.61
3.3V 3.26 Volts 2.96 3.63
DIMM Volt 1.53 Volts 1.34 1.98
5V 5.11 Volts 4.51 5.50
12V 11.90 Volts 10.75 13.18
Fan
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

4-5 Security Settings

Choose Security from the Phoenix BIOS Setup Utility main menu with the arrow keys. You should see the following display. Security setting options are displayed by highlighting the setting using the arrow keys and pressing <Enter>. All Security BIOS settings are described in this section.


Phoenix cME FirstBIOS Pro Setup Utility
Main
Advanced
Security
Boot
Exit
Item Specific Help
Supervisor Password Is: Clear
User Password Is: Clear
Set Supervisor Password [Enter]
Set User Password [Enter]
Fixed disk boot sector: [Normal]
Password on boot: [Disabled]
Supervisor Password controls access to the setup utility.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Supervisor Password Is:

This item indicates if a supervisor password has been entered for the system. **Clear** means such a password has not been used and Set means a supervisor password has been entered for the system.

User Password Is:

This item indicates if a user password has been entered for the system. **Clear** means such a password has not been used and Set means a user password has been entered for the system.

Set Supervisor Password

When the item Set Supervisor Password is highlighted, hit the **<Enter>** key. When prompted, type the Supervisor's password in the dialogue box to set or to change supervisor's password, which allows access to the BIOS.

Set User Password

When the item Set User Password is highlighted, hit the **<Enter>** key. When prompted, type the user's password in the dialogue box to set or to change the user's password, which allows access to the system at boot-up.

Fixed Disk Boot Sector

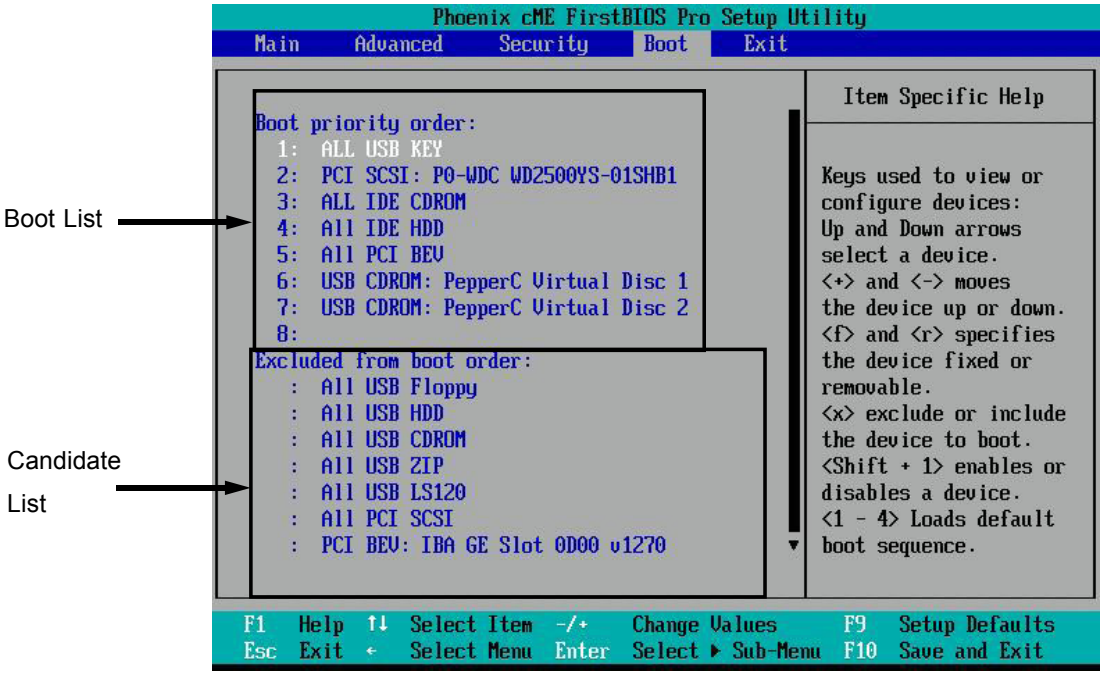
Select **Normal** to enable the function of Write-Protect to protect the boot sector on the hard drives against viruses.

Password on Boot

When this feature is set to Enabled, a password is required for a user to enter the system at bootup. The options are Enabled (password required) and **Disabled** (password not required).

4-6 Boot Settings

Choose Boot from the Phoenix BIOS Setup Utility main menu with the arrow keys. You should see the following display. See details on how to change the order and specs of boot devices in the Item Specific Help window. All Boot BIOS settings are described in this section.


Boot List
Candidate List
Phoenix cME FirstBIOS Pro Setup Utility
Main
Advanced
Security
Boot
Exit
Boot priority order:
1: ALL USB KEY
2: PCI SCSI: P0-WDC WD2500YS-01SHB1
3: ALL IDE CDROM
4: All IDE HDD
5: All PCI BEV
6: USB CDROM: PepperC Virtual Disc 1
7: USB CDROM: PepperC Virtual Disc 2
8:
Excluded from boot order:
: All USB Floppy
: All USB HDD
: All USB CDROM
: All USB ZIP
: All USB LS120
: All PCI SCSI
: PCI BEV: IBA GE Slot 0D00 v1270
Item Specific Help
Keys used to view or configure devices:
Up and Down arrows select a device.
<+> and <-> moves the device up or down.
<f> and <r> specifies the device fixed or removable.
<x> exclude or include the device to boot.
<Shift + 1> enables or disables a device.
<1 - 4> Loads default boot sequence.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

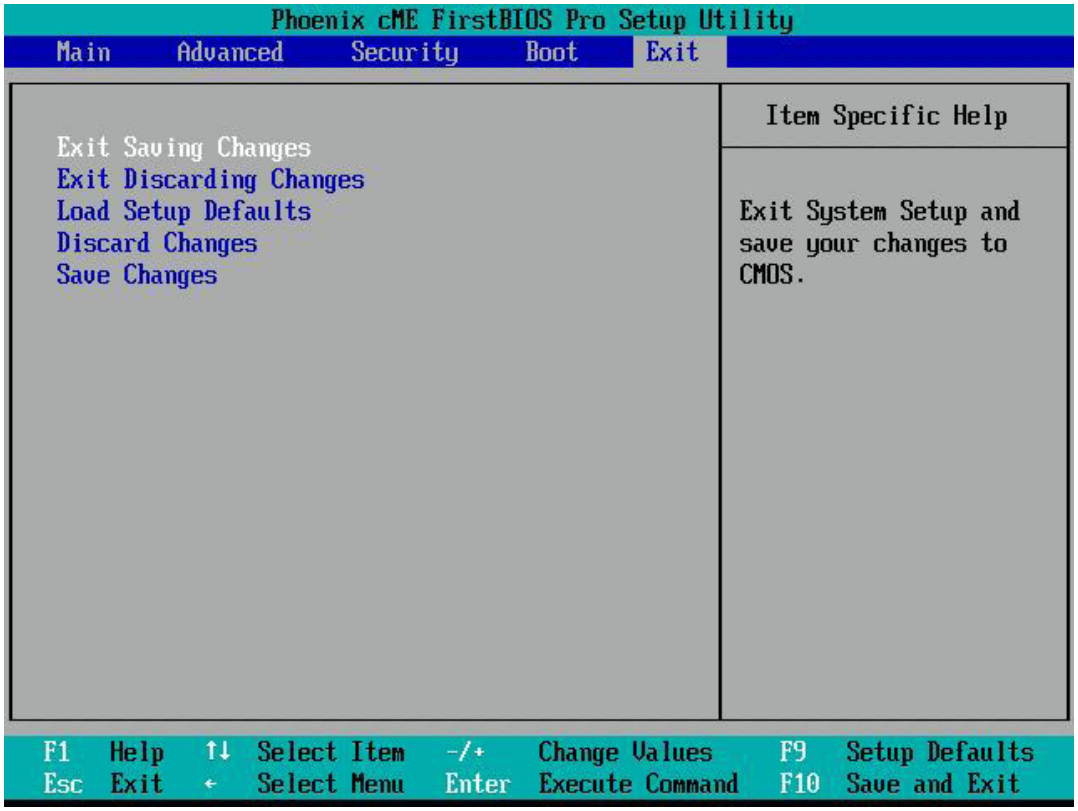
Boot Priority Order/Excluded from Boot Orders

The devices included in the boot list section (above) are bootable devices listed in the sequence of boot order as specified. The boot functions for the devices included in the candidate list (above) are currently disabled. Use a <+> key or a <-> key to move the device up or down. Use the <f> key or the <r> key to specify the type of

an USB device, either fixed or removable. You can select one item from the boot list and hit the <x> key to remove it from the list of bootable devices (to make its resource available for other bootable devices). Subsequently, you can select an item from the candidate list and hit the <x> key to remove it from the candidate list and put it in the boot list. This item will then become a bootable device. See details on how to change the priority of boot order of devices in the Item Specific Help window.

4-7 Exit

Choose Exit from the Phoenix BIOS Setup Utility main menu with the arrow keys. You should see the following display. All Exit BIOS settings are described in this section.



Exit Saving Changes

Highlight this item and hit <Enter> to exit the BIOS Setup utility while saving any changes you may have made.

Exit Discarding Changes

Highlight this item and hit <Enter> to exit the BIOS Setup utility without saving any changes you may have made.

Load Setup Defaults

Highlight this item and hit <Enter> to load the default settings for all items in the BIOS Setup. These are the safest settings to use.

Discard Changes

Highlight this item and hit <Enter> to discard (cancel) any changes you made. You will remain in the Setup utility.

Save Changes

Highlight this item and hit <Enter> to save any changes you made. You will remain in the Setup utility.

Appendix A

BIOS POST Error Beep Codes

This section lists POST (Power On Self Test) error beep codes for the Phoenix BIOS. POST error beep codes are divided into two categories: recoverable and terminal. This section lists Beep Codes for recoverable POST errors.

Recoverable POST Error Beep Codes

When a recoverable type of error occurs during POST, BIOS will display a POST code that describes the problem. BIOS may also issue one of the following beep codes:

1 long and two short beeps - video configuration error

1 repetitive long beep - no memory detected

1 continuous beep with front panel Overheat LED on - system overheat

Notes

Appendix B

Installing the Windows OS

After all hardware components have been installed, you must first configure Intel South Bridge RAID Settings before you install the Windows OS and other software drivers. To configure RAID settings, please refer to RAID Configuration User Guides posted on our website at www.supermicro.com/support/manuals.

B-1 Installing the Windows XP/2000/2003 OS for Systems with RAID Functions

1. Insert Microsoft's Windows XP/2000/2003 Setup CD in the CD Driver, and the system will start booting up from CD.

2. Press the <F6> key when the message-" Press F6 if you need to install a third party SCSI or RAID driver" displays.

3. When the Windows XP/2000/2003 Setup screen appears, press "S" to specify additional device(s).

4. Insert the driver diskette-"Intel AA RAID XP/2000/2003 Driver for ICH9R" into Drive A: and press the <Enter> key.

5. Choose the Intel(R) ICH9R *SATA RAID Controller* from the list indicated in the XP/2000/2003 Setup Screen, and press the <Enter> key.

6. Press the <Enter> key to continue the installation process. (If you need to specify any additional devices to be installed, do it at this time.) Once all devices are specified, press the <Enter> key to continue with the installation.

7. From the Windows XP/2000/2003 Setup screen, press the <Enter> key. The XP/2000/2003 Setup will automatically load all device files and then, continue the Windows XP/2000/2003 installation.

8. After the Windows XP/2000/2003 OS Installation is completed, the system will automatically reboot.

B-2 Installing the Windows XP/2000/2003 OS for Systems without RAID Functions

1. Insert Microsoft's Windows XP/2000/2003 Setup CD in the CD Driver, and the system will start booting up from CD.

2. Continue with the OS installation. The Windows OS Setup screen will display.

3. From the Windows XP/2000/2003 Setup screen, press the <Enter> key. The XP/2000/2003 Setup will automatically load all device files and then continue with the Windows XP/2000/2003 installation.

4. After the Windows XP/2000/2003 OS Installation is completed, the system will automatically reboot.

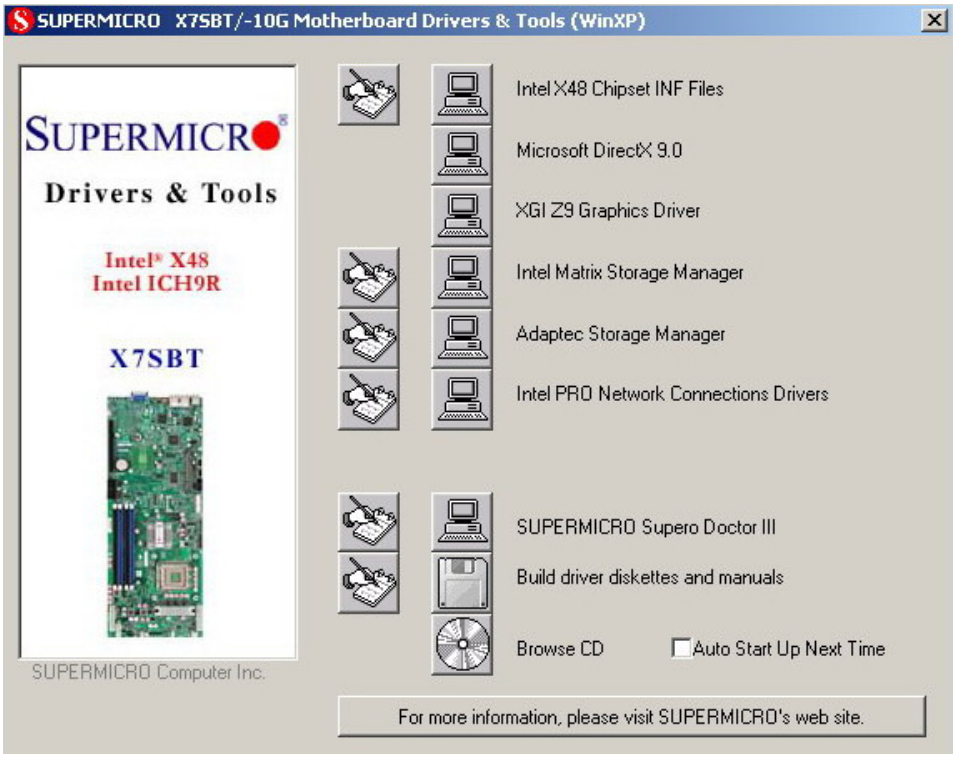
5. Insert the Supermicro Setup CD that came with your motherboard into the CD Drive during system boot, and the main screen will display.

Appendix C

Installing Other Software Programs and Drivers

C-1 Installing Drivers other than the Adaptec Embedded Serial ATA RAID Controller Driver

After you've installed the Windows Operating System, a screen as shown below will appear. You are ready to install software programs and drivers that have not yet been installed. To install these software programs and drivers, click the icons to the right of these items.



Driver/Tool Installation Display Screen

Note: Click the icons showing a hand writing on the paper to view the readme files for each item. Click on a computer icon to the right of an item to install an item (from top to the bottom) one at a time. **After installing each item, you must re-boot the system before proceeding with the next item on the list.** The bottom icon with a CD on it allows you to view the entire contents of the CD.

C-2 Configuring Supero Doctor III

The Supero Doctor III program is a Web-base management tool that supports remote management capability. It includes Remote and Local Management tools. The local management is called the SD III Client. The Supero Doctor III program included on the CDROM that came with your motherboard allows you to monitor the environment and operations of your system. Supero Doctor III displays crucial system information such as CPU temperature, system voltages and fan status. See the Figure below for a display of the Supero Doctor III interface.

Note: 1 The default user name and password are ADMIN.

Note 2: In the Windows OS environment, the Supero Doctor III settings take precedence over the BIOS settings. When first installed, Supero Doctor III adopts the temperature threshold settings previously set in BIOS. Any subsequent changes to these thresholds must be made within Supero Doctor, since the SD III settings override the BIOS settings. For the Windows OS to adopt the BIOS temperature threshold settings, please change the SDIII settings to be the same as those set in BIOS.

Supero Doctor III Interface Display Screen-I (Health Information)

Supero Doctor III Interface Display Screen-II (Remote Control)

Super Doctor III
Remote Management
SUPERMICRO
System Info | Health Info | Performance | Remote Control | Configuration | Administration | Systems Management | Report | Help
Remote Control
Graceful Power Control
Open Console
Power Control
Enter
Graceful power control
Supero Doctor III allows a user to inform the OS to reboot or shut down within a specified time (the default is 30 seconds). Before the system reboots or shuts down, it's allowed to cancel the action.
Requirements
Keep Supero SD3Service Daemon running at all times on this system.
Provide TCP/IP connectivity.
Power control

Note: SD III Software Revision 1.0 can be downloaded from our website at: ftp://ftp.supermicro.com/utility/Supero_Doctor_III/. You can also download SDIII User's Guide at: http://www.supermicro.com/PRODUCT/Manuals/SDIII/UserGuide.pdf. For Linux, we will still recommend that you use Supero Doctor II.

Notes

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